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WELCOME
FROM THE EDITOR

FROM THE PAGES OF MAGAZINES and books to the pics gracing cereal packets and billboards, every published image you see has been enhanced in Photoshop. The adjustments may be subtle or extreme, but everything's had some sort of clean up, colour tweak, contrast boost or composition change applied to it. Pushing the pixels to improve the way a picture looks is part and parcel of digital photography, and to be a complete photographer, the skills involved are just as essential as pointing your lens in the right direction!

But mastering the art of image-editing is the stumbling block for many enthusiasts, so to counter this, we have a complete crash course on the subject. All the main bases are covered, so whether you're new to photography or a more seasoned snapper after a refresher, the projects in our special *Photoshop Genius* section (p69) will see you improving every shot you take. There are exclusive videos on the cover CD to support each tutorial, and by watching these and practising the skills they describe, you can learn all you need to know in a single day!

Jon Adams Editor
jon.adams@bauermedia.co.uk

Jon

JESUS GARCIA

DIGITAL PHOTO

On the cover

This amazing image was captured by Spanish photographer Jesus Garcia and blends a beautiful sense of composition with a high degree of technical skill. From the star-studded sky to the symmetrical framing of the lavender field and tree, all the elements for the shot were captured at the same location in Guadalajara, Spain.

To experience the shot in all its glory and find out more about how it was captured, see *Planet Photo* on p8. To see more of Jesus' outstanding landscape work, visit *www.jesusmgarcia.es*

Three ways we'll help you get better pictures this month

1 Outstanding shooting ideas

Get inspired with our guide to creating arty shots using the features of your camera. From free-lensing to shutter drag, we reveal the techniques that'll make your pics stand out on p26.

2 Top imaging techniques

Cropping, boosting contrast, adjusting colour, using Layers, straightening shots, sharpening... We have a full course on the Photoshop skills every photographer needs on p69.

3 The best gear buying advice

As well as in-depth reviews of Fujifilm's X-T10 CSC and Pentax's flagship K-3 II, we examine the second-hand market and reveal how you can get a superb pro DSLR for just £500.

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OCTOBER

DIGITAL PHOTO

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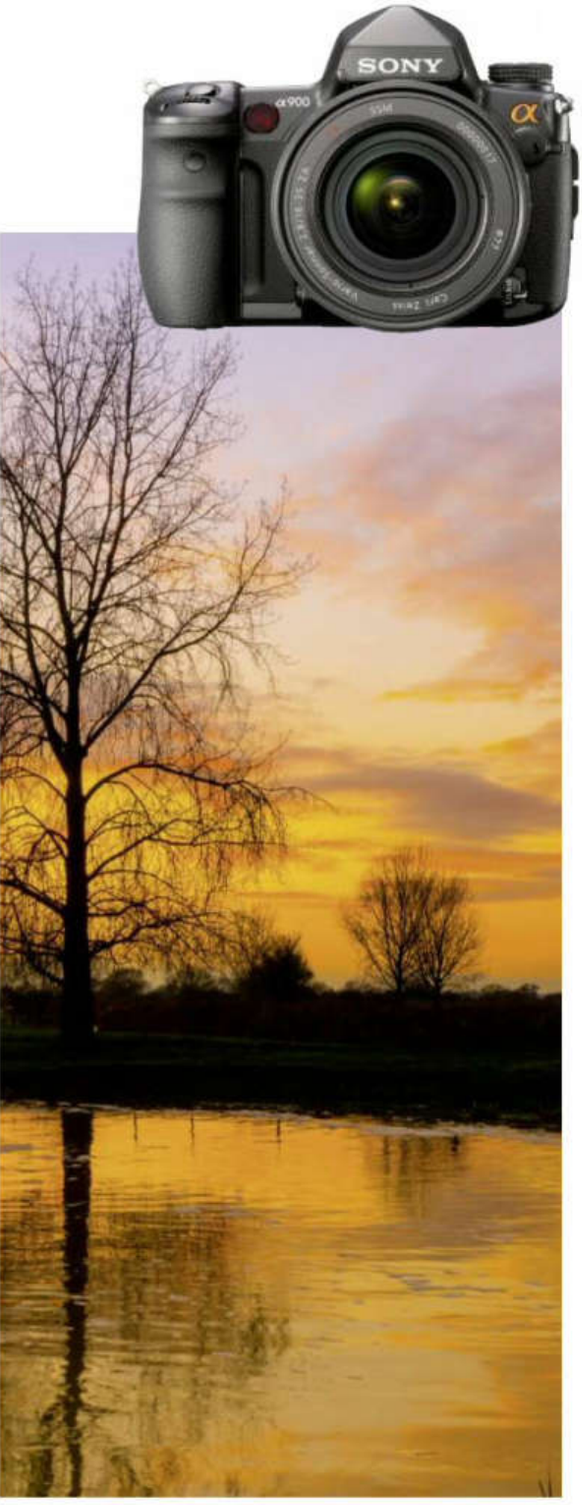

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The flagship DSLR from Pentax sees GPS and astrotracing added to its features.

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Take advantage of this amazing offer and get a Manfrotto backpack and tripod thrown in with a year's supply of the UK's best mag!

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Expert advice on creative exposure modes, combatting the blur of camera shake, getting your bag zips into working order, and customising your copy of Lightroom!

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A sneak peek at what's coming up in the next issue of Britain's favourite photo mag.

9 VIDEO TUTORIALS ON YOUR FREE CD

110 MINUTES OF EXPERT ADVICE

Pop the *PhotoSkills* CD in your PC or Mac and get set for the ultimate learning experience. There are nine in-depth video lessons on the disc, all brought to you by the same team of expert photographers that make the mag. Watching our experts talk you through a technique will help you master the skills you need, and you can view the videos as many times as you like.

This month, we help you learn Photoshop and Elements in a day with our crash course! Sit back and watch the tutorials on screen, then follow the mag's step-by-steps in your own software using the supplied start images. Once you've completed the project, try it again without using the mag or video for reference. You'll be surprised how much sticks!

Do this with all nine projects, and you'll have the essential Photoshop skills nailed – all in a single day! It's a fantastic method of learning, and every picture you take will reap the benefits!

1 THE ULTIMATE SELFIE

Blend multiple self-portraits together into the same scene using Photoshop Layers and Masks for a striking effect.

2 CROP FOR IMPACT

Why you should crop first, plus how to set up and use the Crop tool to fine-tune your composition.

3 BOOST CONTRAST

Learn how to use the Levels palette to optimise the contrast and colour balance of any picture.

4 ADD NEW SKIES

Use Selections and Layers in a highly creative project that replaces a dull sky with a much more dramatic one.

5 CLEAN UP PICS

Unsightly distractions spoil a shot, so find out how you can remove them seamlessly using Cloning and Healing.

6 STRAIGHTEN SHOTS

Quickly reshape your images for the better using the special modes of the Free Transform command.

7 CONVERT RAWS

Balance the contrast in your exposures plus bring out rich sunset colours with this full guide to RAW processing.

8 SHARPEN SHOTS

Discover how you can highlight the detail present in sharply focused areas, and leave other parts alone.

9 PRESENT YOUR PICS

Add your favourite shots to our free templates and present your images with a professional-style finish.

Also on your amazing interactive disc this month...

START IMAGES
Use these files to practise the projects with your own software.

READER GALLERY
Inspiring pics from *Digital Photo* readers.

MICK MARTINDALE

5 FREE BONUS TUTORIALS
Take your creative imaging skills to the next level with these essential extra techniques.

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Planet Photo

Your fresh fix of inspiration from the world's best photographers

A starry goodnight to summer

Incredibly, this image by Spanish photographer **Jesus Garcia** is not a composite made up of different frames from separate locations. Jesus instead captured an eight-frame vertical panorama exposing for both the foreground rows of lavender and the star dappled Milky Way above. For the first few frames, Jesus used ISO 3200 to record the detail on the ground at the rural Spanish location. But for his shots of the sky, the ISO was ramped up to 6400 to reveal the stars. The glow behind the tree was actually light pollution from a nearby village. To research for the shoot, Jesus used PhotoPills – a smartphone app that gives information on the position of constellations, along with the times for the best light.

Camera Nikon D810 & 14-24mm lens **Exposure** 8 x 13secs @ f/8, ISO 3200 & 6400
Software Photoshop **Visit** www.jesusmgarcia.es

JESUS GARCIA

Pushing the limits

The Golden Gate from above

The Golden Gate Bridge in San Francisco is purported to be the most photographed bridge in the world, so getting a fresh image was a formidable task for professional aerial photographer **Toby Harriman**. "A love for photography grabbed me by my lapels and now I hang out of helicopters, dodge waves on distant shores, and get up at oft-forsaken hours to glimpse our galaxy sprawled across a night sky," he tells us.

The idea for this unusual angle came as a direct result of shooting the Golden Gate Bridge too many times. "I was always on a mission to capture it from every angle I could, with the best light and conditions. When I had the opportunity to get up in a helicopter, I knew it was my chance." The shot, which he captured using a Canon 70-200mm lens, required many passovers and a great pilot to put him in the perfect position over the tower.

Using Adobe Lightroom and Photoshop to process the file, Toby applied some manual lens corrections to make sure the image squared up perfectly.

Camera Canon EOS 6D & 70-200mm L series lens **Exposure** 1/320secs @ f/4, ISO 100 **Software** Photoshop & Lightroom **Visit** www.tobyharriman.com

TOBY HARRIMAN

Four beautiful bridges to shoot in the UK

Here's our pick of the best bridges to train your lens on – they'll all give great looking images whatever the weather's doing.

ASHNESS BRIDGE – CUMBRIA
Found seven miles south of Keswick, on the east side of Derwentwater. The stone bridge offers amazing views across Borrowdale towards Skiddaw.

TYNE BRIDGE – NEWCASTLE
Now complemented by modern architecture on the banks, the bridge is great to shoot by day or lit up at night.

MILLENNIUM BRIDGE – LONDON
With its stainless steel construction, the bridge provides a perfect lead-in line to St Paul's Cathedral.

ISTOCK IMAGES

IRONBRIDGE – SHROPSHIRE
Six miles south of Telford, the iconic Ironbridge is an architectural masterpiece. Pack a wide-angle lens to get the whole bridge in one frame.

Alex used a 20mm prime lens with a 10-stop ND filter to blur the motion of the water over a 10secs exposure.

ALEX GAFLIG

Creative composition

Lead-in lines: Guide your viewer to the focal point

Lead-in lines are elements within a picture that attract the eye and guide it towards the main focal point. In **Alex Gaflig**'s image, the bridge immediately grabs you, and you can't help but follow its gentle curve over the water and into the image. As it hits the edge of the waterfall, your eyes are taken to the right, and up the misty cascade. Many features of a scene can be used as lead-in lines, from fences and rows of flowers to roads and trails. Anything that acts as a 'handrail' to take your viewer towards the key subject can be used. Placing a lead-in line in the bottom corner of the frame provides a really solid composition, and by using a small aperture setting such as f/16, you can keep it sharp all the way through. Look out for lead-in lines when you're next out shooting, and you'll make your shots really compelling.

A walk through paradise

With its blue waters and fairytale waterfalls, Croatia's Plitvice National Park is fast becoming a must-visit landscape location. This image was captured by German photographer **Alex Gaflig** while on the trip of a lifetime through Slovenia, Bosnia and Austria. "You walk through unbelievable nature with waterfalls everywhere," explains Alex. He used an unusual optic to pair with his Sony A7 MkII – a Canon FD 20mm f/2.8. "I bought it off eBay and it's a pleasure to use." Alex used a 10-stop ND filter to create a long enough shutter speed to capture the wonderful swirls made by the waterfall.

Camera Sony A7 MkII & 20mm lens **Exposure** 10secs @ f/11, ISO 100
Software Photoshop **Visit** 500px.com/alexgaflig

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The shady world of counterfeiting is on the increase in photography – stay alert to avoid fake kit.

JON ADAMS

What everyone's talking about

Are you shooting with counterfeit gear?

Do you know where you camera gear came from? Ever thought there's something not quite right about it?

Canon recently released a warning about counterfeit examples of its flashguns circulating in the market and it seems these cases may be on the rise. In another worrying episode, US photographer Lee Morris reported to photo website Petapixel that the Nikon-branded battery grip he had just spent his hard-earned money on was in fact a fake.

Counterfeit gear may seem harmless, but dodgy electronics could seriously damage your camera and even your health. Genuine products such as flashguns and batteries are tested before they leave the factory and include thermal circuit protection. For a flashgun, this means it will switch to standby if it overheats, while in the case of the batteries, this protection will stop them over-charging when the capacity has been reached. The potential consequences, if either goes wrong, are unthinkable.

So with more hooky gear on the market, what can you do to protect yourself? Well, the first step is to only buy from reputable sources. If something on an auction site sounds too good to be true, it usually is. Secondly, it can pay to periodically check your camera brand's website to see if any fake products have been reported. Alternatively, type the product's name into a search engine and any recent news reports will spring up.

Lastly, if you have suspicions about an item of kit, get it checked out at a service centre – the staff will quickly be able to confirm if you've bought a fake. If you've ever been caught out by dodgy gear, let us know at *dp@bauermedia.co.uk* or drop us a line over on our Facebook page – *www.facebook.com/digitalphotouk*

Essential advice

4 ways you can spot fake equipment

1 SERIAL NUMBERS

Always make sure there is a serial number on the bottom of the camera. Not all lenses will feature this security measure, but all DSLRs will have one.

2 IMPERFECT PRINT

Any photo item will have some print on the base – 'Made in Japan' for example. If the print is faint or out-of-register, this could be a sign it's counterfeit kit.

3 ODD PARTS

Look for dials and latches that don't quite fit, or are rough around the edges. Copies of Canon's 600EX-RT flashguns had completely different latches.

4 WARRANTY CARDS

Cameras and lenses come with international warranty cards. If this card is missing, it could be a sign the equipment you've bought isn't genuine.

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Cesar had to be incredibly patient, waiting until he could pick exactly the right moment to capture the interaction between the child and the giant hippo at a zoo in Valencia.

Going wild for nature

The wonder of a child coming face to face with a giant hippo was captured by Indonesian-based photographer **Cesar March**, while shooting at a zoo in Valencia, Spain. The image was part of a project Cesar was working on, focusing on the behaviour of hippos. "A year before this picture I got a spectacular image of the hippo looking shocked at a couple of children. The image was very popular and I received several awards. So I went with the idea of composing pictures of hippos interacting with people," he explains.

Cesar paired a Nikon D800 DSLR with a 70-200mm f/2.8 lens, but the key to capturing this image was persistence. "With a little luck and a lot of waiting around, I was able to capture very dynamic photos of the visitors playing and interacting with the hippos." One technical problem Cesar had to overcome was the artificial environment. "The aquarium glass is very thick and has visible scratches. In Photoshop I added contrast to give detail to the hippo and also painstakingly removed all the scratches."

Software 1/125sec @ f/4, ISO 800 **Software** Photoshop

Visit www.cesarmarch.com

Get the shot

Telezooms for every budget

1 TAMRON 70-300MM F/4.5-5.6 DI LD – £89
An affordable telezoom available for all DSLR brands. When paired with an APS-C camera it gives a focal length of 105-450mm.

2 CANON 70-200MM F/4 L – £400
One of Canon's most affordable L lenses – used versions can be picked up even cheaper.

3 SIGMA 150-600MM F/5-6.3 C – £899
600mm for less than a grand means this lens offers great value for money for wildlife fans.

4 NIKON 70-200MM ED VRII F/2.8 – £1580
It's expensive, but this fast optic from Nikon offers quality and versatility. What's more, it's weatherproofed, so you can keep shooting when the heavens open.

CESAR MARCH

MATTY SMITH

"It took weeks of experimentation"

Underwater maestro **Matty Smith** captured this incredible shot of an iridescent subject! We asked him how he did it...

What on earth is that?
This is a 'Physalia Physalis', also known as a Portuguese Man-of-War. Although it looks like a single organism, and functions like one, it's actually a colony composed of several individual animals. It's fascinating to look at.

How was this shot conceived?
The zooid colonies at the bottom glow a glorious translucent blue when hit by underwater flashes. I thought it'd look magnificent in front of a warm, dramatic sunrise.

How did you go about capturing it?
I used two Inon Z220 Strobe lights and a Nikon D300S inside a Aquatica Digital underwater housing. The camera settings and lens are critical for this type of shot. You need to maximise depth-of-field, but you also need a fast shutter speed to freeze the subject, as it's moving around while you're swimming and trying to frame up. I used an aperture of f/13 at 1/320sec and ISO 320 with Manual mode.

What was the trickiest part?
Keeping the water dark and illuminating the subject required careful lighting. It took weeks of experimentation. Eventually I found that putting fibre optic snoots on my underwater flashes enabled me to pick out just the right amount of detail without overexposing the surrounding area. *Visit* ***www.mattysmithphoto.com***

Planet
Photo

BENO SARADZIC

Behind the scenes

Meet the man who can bend time

Most photographers aim to capture their subject at a specific time of day, but Slovenian photographer and film-maker **Beno Saradzic** does things differently. Using a technique called Time Dilation, Beno can show the same subject at different times of the day – all in one frame.

"I shoot a lot of time-lapse films of cities and many sequences run from night 'til morning or from afternoon 'til night. I end up with hundreds, sometimes thousands of RAW files of the same scene," explains Beno. "The idea of time-dilation image blending came to me during a seven-hour rooftop time-lapse session in Abu Dhabi." Essentially, Beno merges the files from a full day of shooting using Photoshop and because of the large file sizes involved, some serious hardware is required. "For this image, I started the shoot at 3am and when my camera took the last exposure, it was 9am! For post-processing, I use a custom-built PC with a total of 24 physical and 48 virtual cores at my disposal. Having so much brute power helps when you need to process thousands of RAW frames."

Beno spent four hours working on the image and says that blending the various Layers would have been impossible without his Wacom Pro Touch tablet. "I've applied hundreds of brush strokes with a pressure sensitive pen in order to mask various Layers. It's not a job I'd want to do with a mouse!"

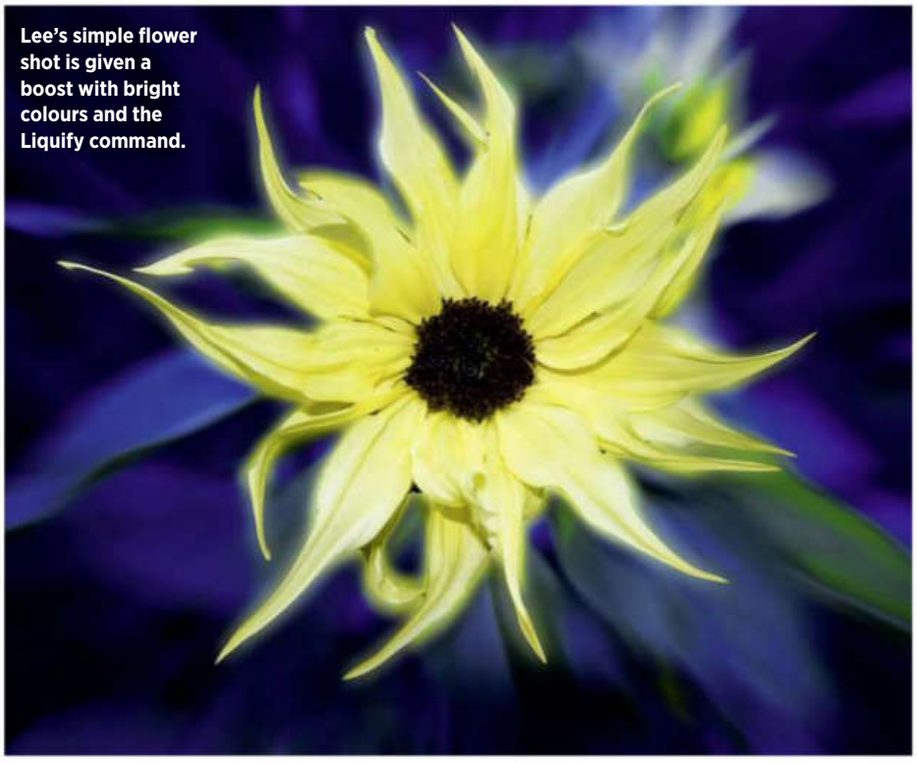
Camera Canon EOS 5D Mark III with 50mm f/1.2 L lens
Exposure Various exposures at f/16, ISO 100 **Software** Photoshop
Visit 500px.com/benosaradzic

How the image came together...

Beno merged a number of frames shot over a six-hour period to create his final image.

It works for me!

Show us what you've been doing with *Digital Photo*'s creative techniques & win great Lexar prizes! Send your best shots to us at **dpimages@bauermedia.co.uk**



Lee's simple flower shot is given a boost with bright colours and the Liquify command.

SCI-FI FLOWER
by Lee Herkes

From: Shrewsbury, Shropshire
Tell us about your image: When I saw the 'Turn bright blooms into alien species' idea in the August 2015 issue, I went out with my Nikon D3300 and 18-55mm lens and shot a flower specifically to try out the technique. Following the step-by-step as closely as possible, I made a Selection of my flower and, on a new Layer, carefully teased out the edges of the petals using the Liquify filter.

I then turned my attention to the background and applied some Gaussian Blur to soften it. Being colourblind, often my perception of colour is different to most people's, but instead of a hindrance, it has led me to use colours in a varied and interesting way. So I adjusted the Blues channel in the Hue/Saturation palette to give a brighter and more sci-fi effect, and to create a background that would make the yellow flower really stand out. Finally, I added the glow with another dose of Gaussian Blur.

ORIGINAL PIC

SHATTERING SCREAM
by John Bermingham

From: Dungarvan, Ireland
Tell us about your image: I saw the amazing composite image by Abdul Khabir Mohamed Ali in the July 2015 issue of the magazine and took inspiration from that to create my own fantasy scene. In the same issue, the Layers within the supplied Special Effects Kit helped me to master the techniques I needed to create this image.

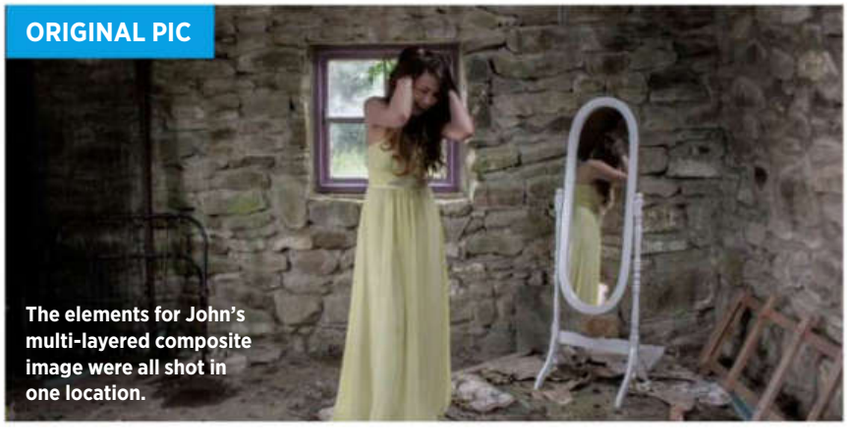
I started by setting up my Canon EOS 700D with 18-55mm lens on a tripod. I then brought in all of the elements shot at the location – the model, mirrors,

John's attention to detail and use of Masking and Layers has made for a highly creative composite image.

sheet and books. I asked a friend to help out, holding a mirror in different areas so that I could use accurate reflections in the shards of mirror. I also created some more 3D shards using Cinema 4D software and composited those into my image on Layers. Creating a custom brush to look like shards of glass, I used the Clone Stamp tool to make these look as though they were pieces of a reflected mirror.

To add to the effect, I painted in some dust and debris, before applying some colour grading to bring it all together. Knowing which elements to give Motion Blur to was tricky, and giving the layers of glass an edge using Bevel and Emboss to make them look realistic took some trial and error.

A time-lapse video showing the entire editing process in Photoshop can be seen on my Facebook page at *www.facebook.com/allthatcanbe*

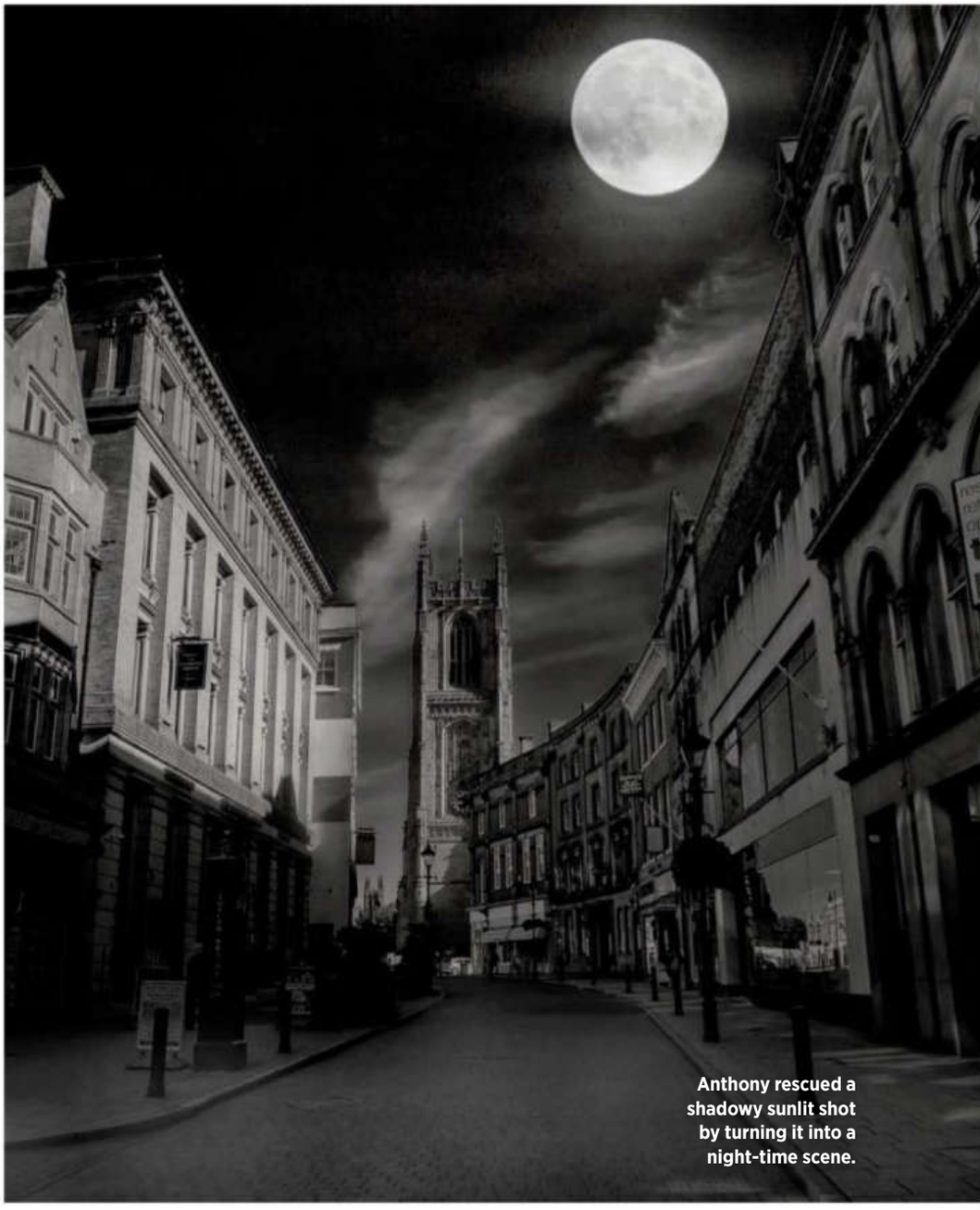


The elements for John's multi-layered composite image were all shot in one location.

BY THE LIGHT OF THE MOON
by Anthony Gidlow

From: Ilkeston, Derbyshire
Tell us about your image: I took this shot on a shopping trip in Derby with the Panasonic Lumix TZ10 that I always have in my pocket. It was a beautiful sunny day, but the shadows cast over the scene made it appear washed out. When I saw the 'Pixels at Dawn' day-to-night conversion in the July 2015 issue, it gave me the idea to give my shot a different treatment.

I started by duplicating the Background Layer, changing the Blending Mode to Multiply to darken the image. Then I used a Hue/Saturation Adjustment Layer to apply some night-time colours, before adding a Deep Blue Photo Filter for a cooler tint. On a black & white Layer, I then adjusted the Luminosity and inserted the moon image that was supplied with the magazine. To throw some moonlight onto the buildings, I used the Gradient tool in its Radial mode, then added some clouds in front of the moon.



Anthony rescued a shadowy sunlit shot by turning it into a night-time scene.

AFTER THE RAIN
by Ferny Keller

From: Sturgeon Bay, USA
Tell us about your image: After watering my garden, I took my Canon EOS 5D MkII with 100mm macro lens and set out to find some good droplets to recreate the 'Use beads of water for refracted beauty' technique in the Spring 2015 issue of *Digital Photo*.

When I looked on the larger flowers, I couldn't find a single droplet that really stood out, but the pink lilies seemed the hold the water perfectly, showing tiny versions of the flowers around them in each droplet. I set my tripod to its lowest height to frame up and keep the shot sharp, and then started to shoot using the Self-timer so as not to create camera shake when pressing the shutter.

I carefully angled my shot so that the same flower was showing in each droplet. I had to be careful not to touch the plant and knock it, while still getting close enough to be able to focus on the tiny refractions. Shooting on a bright day meant the water droplets took on a pleasing natural sparkle.

Delicate water drops on Ferny's freshly-watered plants produced refractions for a macro lens to capture.

SEEING DOUBLE
by Terence Stares

From: Middlesbrough, Cleveland
Tell us about your image: Using my Canon EOS 50D and 100mm macro lens, I captured this ladybird delicately perched on a leaf. Remembering the 'Create amazing digital water' in the Spring 2014 issue, I thought this image would work well as a reflection.

First I extended the canvas size of my image to make space for the reflection, and then created a mirror image of my shot by making a duplicate of the original Layer and turning it upside-down using the Free Transform command. I blended the two images using the Gradient tool before applying the Displace Filter supplied with the Water Reflection Kit in the magazine. This created a realistic reflection. Finally I applied some Gaussian Blur to my reflection Layer to improve the effect. I've found that creating a reflection from nothing adds an interesting new dimension to any image.

Terence's ladybird shot makes a bright and zingy reflected image.

BRIGHT SPARK
by Jason Sedgemore

From: Exmouth, Devon
Tell us about your image: When I saw the 'Out of the ordinary' article in the August 2015 issue, I instantly wanted to take up the challenge to create my own eye-catching image using only a box of matches.

I set up my Nikon D3100 on a tripod and positioned a daredevil mini-figure with a match in his hand. I placed him in front of some white card before aiming a torch at the figure to cast some light. I used a remote shutter release with the camera set to Continuous shooting mode and set the shutter to 1/4000sec. I then ignited the match using another match, and fired a burst of shots while the flame took hold.

Jason took up our 'Out of the ordinary' challenge to create a truly striking image.

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Manfrotto Gear Pack Medium Backpack

The Gear Backpack M is a compact, functional and ergonomically designed pack that more than holds its own against similar-sized packs on the market. Although it's compact in size, it can accommodate a pro-sized DSLR with attached 70-200mm f/2.8 lens. In addition it will store two other lenses such as a 16-35mm f/2.8 zoom as well as a 100mm macro. Access is easy using the dual zippers to open it and expose the entire contents. Inside the front lid are organizer pockets for small items like memory cards, cleaning cloths, phone, wallet, pens, cables and LED lights.

Manfrotto Pixi Mini Tripod

An old adage says 'the best tripod is the one you've got with you', and the lightweight build and small size of the Manfrotto PIXI means you'll always carry it. Great for low angles, or regular shots when perched on a table or wall, you can also close the legs to turn it into a comfortable grip for capturing video. The new push-button mechanism locks the ball head in one rapid, intuitive movement, and the rubber feet give a slip-free purchase on any surface. Ideal for compact system cameras, the PIXI can also be used with smaller DSLRs (under 650g body weight). It'll support a maximum load of 1kg, and packs down into a tiny bundle just 18.5cm long. Keep it in your pack and you'll barely know you're carrying it!

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Create art with your camera

Use your DSLR's special features and modes to capture pics fit for the gallery!

Switch a scene's mood with White Balance *p28*

Get swirls of soft focus with free-lensing *p30*

FINE-ART PHOTOGRAPHY OFTEN REQUIRES A GOOD dose of Photoshop processing to get the distinctive, creative look that stands the test of time. But hidden inside every enthusiast camera are a plethora of modes and settings that will produce spellbinding results without any digital intervention. By using them, you'll be rewarded with the satisfaction of capturing a complete image in a purist way. But it goes deeper than this, because some truly striking effects can't be emulated in software. They can only be achieved by mixing the old-school, photographic variables of light, time and lens.

Over the coming pages, we serve up four fun projects that will unlock your camera's creative potential and deliver shots you'll savour. They're all easy to do and will provide you with images fit for the gallery at the instant your shutter closes...

Turn the page to set out on your artistic journey...

Go with the grain for a retro fast film look *p32*

Mix light and time with shutter drag *p34*

Tweak White Balance to shift a scene's mood

TECHNIQUE & PICS BY MATTY GRAHAM

PHOTOGRAPHERS OFTEN ADJUST SETTINGS to control the movement in an image, or the exposure level in the picture, but did you know you can also adjust the settings of your camera to tweak the colour in the frame? Adjusting the White Balance (WB) will alter the colour temperature of the picture – how warm or cool the frame appears to the viewer. While this feature is usually employed to achieve accurate colours by matching the colour temperature to the scene's lighting, it can be used creatively too.

By intentionally mismatching the colour balance, you can introduce a surprising lift to the atmosphere in a scene. Warming up a shot can replicate the hues of the Golden Hour, while using a cooler setting can introduce a melancholy mood. These dramatic shifts are just a press of a button away, so here's how to make it happen...

The original image, with a bluer colour palette, doesn't have the warmth of the adjusted shot.

By purposely mismatching the White Balance, you can introduce mood and atmosphere to your scene

Switch white balance in seconds

1 Set up your camera

Find your location, and attach your camera to a tripod. Select Aperture priority mode and dial in f/16 to create a large zone of sharp focus. Frame up and focus about one-third of the way in to the scene, then switch to Manual Focus (MF).

2 Select the White Balance option

On most cameras, there is a dedicated White Balance (WB) button so you can quickly access the settings. On some CSCs and compacts, you may have to access the WB options via the Menu screen.

3 Adjust the colour temperature

Select the Colour Temp option (typically identified by a K symbol) and use the command dial to increase the colour temperature to around 9000K (Kelvin) to warm the scene, or 3000K to cool it down.

4 Take your shot

Press OK to confirm the WB changes and then press the shutter to capture your image. Press the review button to check the image and, if necessary, make any further changes to the WB settings before reshooting.

EXPERT TIP
Correct the White Balance back at the computer

If you're unsure whether to cool down or warm up a scene, you can decide later if you shoot in RAW format. This will allow you to adjust the WB using RAW conversion software when you have returned from your day out with the camera.

Adobe Camera Raw, Lightroom or the RAW software that came with your camera will allow you to make these adjustments and enhance the mood in the picture.

Try free-lensing for stylised shots

TECHNIQUE & PICS BY JON ADAMS

GETTING A HIGHLY STYLISED LOOK TO YOUR pictures is often something reserved for Photoshop, but this great camera technique will allow you to make your pics genuinely different. 'Free-lensing' is a very hands-on way of shooting. It involves taking your lens off the camera and manually holding it in position. With no mechanical or electronic links between the camera body and the lens, there's no access to the regular exposure controls, so experimentation is part of the fun.

With the lens held freely, you can tilt it in any direction to alter the sweet-spot of sharp focus, and if you shoot towards a light source, you can also angle the lens to create or suppress flare to get a truly artistic look that's utterly unique.

Free-lensing comes with a few challenges. The best optic to use is a prime lens, but because it's not attached to the camera, it can be of any make. Focal lengths between 28mm and 50mm give the best results, so if you have an old prime lens gathering dust somewhere, now's the time to use it. If not, you'll find one for £10 or less on auction sites.

Most modern lenses aren't suitable, because they don't have a physical aperture ring, and with the exception of Canon models, all popular lens makes close the aperture when the lens is removed. This means barely any light will pass through, and free-lensing won't be possible. Once you've found, borrowed or bought a suitable lens, follow the steps below to capture a great shot with stacks of arty appeal.

Discover the art of free-lensing

1 Set up your camera

Switch off your camera and remove the lens, then power it up and set it to Aperture priority mode (A or Av on the mode dial). Your F number will display as '0' but don't worry about this. Fire the shutter to check your model will shoot with no lens attached. If it won't, set it to Manual mode (M), select a shutter speed of 1/250sec and try again. Set the ISO value to its lowest setting (normally 100), and ideally, set RAW as the file format. This isn't essential, but you'll have more latitude to refine the image with a RAW file than with a JPEG.

2 Position the lens

Open the aperture ring to a setting of f/4 on your prime lens so you can see through its optics. Rotate the focusing ring to the Infinity mark, and hold the lens close to – but not touching – the camera body. Look through the viewfinder and roughly frame up on your subject. To do this, move the camera to and fro to get the composition, then gently move the lens itself back and forth to find your point of sharp focus.

3 Take the shot

Tilt the lens up, down, right or left to alter the way the band of sharp focus runs through the image. When you have it as you want it, depress the shutter button to take the picture. Take a brace of shots, as focusing in this way isn't very precise and you'll need to select the best of the bunch later! Review the results on screen and zoom in to check the sharpness in your sweet spot. If you can shoot in Aperture priority, the shutter speed will be set by the camera. If you need to use Manual mode and your picture's too dark, try a slower shutter speed of 1/125sec and reshoot. If it's too bright, use 1/500sec or faster, until you achieve a good exposure.

Taken with a 50mm lens in the regular way, the shot looks rather flat by comparison and doesn't have the same artistic appeal.

EXPERT TIP
Vary the aperture setting for different creative effects

Rotating your lens' aperture ring to a smaller setting will create a broader band of sharp focus, but will also reduce the amount of light that can pass through the lens. This will introduce light leaks and flare into the shot, creating a foggier appearance that's low in contrast but still rather arty. Try different aperture settings while you're set up for free-lensing, as it doesn't take long and gives a very different effect.

Shoot with a lens floating away from your camera for unique, dreamlike results

Shooting with a lens detached from the camera gives a wonderfully unique look that would be very difficult to achieve in Photoshop.

Fake the fast film look with a high ISO

TECHNIQUE & PICS BY MATTY GRAHAM

A GREAT WAY TO BRING A SENSE OF ART TO your images is to replicate the look and feel of analogue photography. It gives the nostalgic yearnings of yesteryear and can bring even the most mundane frame to life by injecting character and mood. A great technique to try is to add the grainy effect of high speed film. This gritty, rough look isn't suited to all subjects but works brilliantly with reportage-style shots, live music events or street scenes.

By using a high ISO setting (such as 2000 or more) you'll produce lots of grain, and if you combine it with your camera's on-board black & white settings, you'll get a fantastic shot with bags of grungy, old-school appeal.

Get an instant gritty look to your street scenes by setting up your camera to emulate fast black & white film.

This effect works brilliantly with reportage-style shots and street scenes

Get the fast-film look in a hurry!

1 Find a suitable subject

Select a subject that will benefit from a gritty makeover. Position them in a suitable place and line up your camera ready to fine-tune your composition. Select Aperture priority mode (A or Av on the mode dial) and dial in an aperture value of f/8.

2 Switch to mono

It's time to switch to the in-camera B&W mode. Different cameras have alternative ways of selecting this feature, but for most DSLRs it's via the Picture Styles or Picture Effects filters. Fire off a quick test shot and check the screen to confirm you're in mono.

3 Increase the ISO

Select the ISO function on your camera via the dedicated button or through the Menu screen options. As modern cameras are very good at suppressing digital Noise, you will have to ramp up the ISO to at least 2000 to emulate the grainy look of fast black & white film.

4 Adjust aperture

There's a good chance that increasing the ISO so high will cause over exposure. If this happens, close down the aperture to f/22. This will reduce the amount of light entering the lens. If this is still too bright, place an ND filter in front of the lens or find a darker location.

EXPERT TIP

Use Picture Styles to try other film effects

Most DSLRs have a Picture Styles option, which allows you to fine-tune the look of the JPEG you capture (RAW files aren't affected).

You can adjust these settings to replicate other retro film effects. A good starting point is to reduce the Saturation for an instant aged film look. You'll find your Picture Styles options in your camera's Menu screens.

Shoot shutter drag portraits

TECHNIQUE & PICS BY DAN MOLD

BELIEVE IT OR NOT, THIS SHOT WAS created entirely in-camera. No Photoshop Layers or Filters have been used – everything was captured in a single exposure. This fantastic, arty effect has been created using a combination of pop-up flash and a long exposure. Your camera's flash can be set to fire at the very beginning of your exposure (called Front/First Curtain Sync), or just as the exposure finishes (called Rear/Second Curtain Sync). Each has its own advantages. Rear Curtain Sync was used for this shot and is perfect for when your subjects are moving as the motion is recorded as striking trails. First Curtain Sync is better for static subjects as this allows you to get a pin-sharp shot and then make your own motion effects by moving the camera. The results are unpredictable, so rely on a degree of trial and error, but with the right kind of subject, you'll have a great shot within five minutes.

Anything too dark will disappear during the long exposure, so look out for colourful lights and ask your subject to wear bright clothing to stand out.

You don't require any additional kit to take these kinds of shots. Your camera's pop-up flash, the right exposure settings and a little perseverance is all you need.

Get amazingly creative portraits by combining flash, long exposures and a moving subject!

SEND US YOURS!
Give in-camera art a try and show us your best pics. Email your shots to: *dpimages @bauermedia.co.uk*

Make your pics pop with flash

1 Set the right flash sync mode

Hit your camera's Flash button to pop up the flash, and then select the right flash mode. You can change the flash mode on Nikon DSLRs by holding the Flash button and turning the command dial, or on Canon models, navigate through the shooting menu. Set Slow/1st Curtain Sync if your subject is stationary or Rear/2nd Curtain Sync if they're moving.

2 Dial in your exposure settings

Set your ISO to its lowest value (normally 100) and ideally use RAW format as this will give you more latitude to refine the exposure in post-processing. Select Aperture priority mode (A or Av on the main mode dial), and frame up roughly on your subject. Dial in a small aperture setting (a high f/number like f/16) that gives you a shutter speed of around 1/2sec. You'll need the background to be dark enough to allow this, so if you can't get 1/2sec, find a darker location.

3 Focus and take the shot

Move the AF point over your subject and half press the shutter to set focus. Take the shot and if you're using Slow/First Curtain Sync, move the camera after it's flashed to create a swirling motion. For Rear/2nd Curtain Sync, keep the camera still while the subject creates the motion. Check the results and keep shooting until you've nailed it!

EXPERT TIP
Get more power with Flash Compensation

You can control the output of your pop-up flash with Flash Compensation. This means if your subject is too dark you can boost the pop-up power and if it's too bright you can reduce it a little. This helps you achieve a flash exposure that's balanced with the ambient lighting. If you shoot in RAW you'll have even more control over the exposure, as you can adjust the overall contrast and brightness in post-processing.

CREATE THE ULTIMATE SELFIE!

Interact with yourself with our in-depth guide to shooting fabulous multiplicity portraits

WORDS & PICS BY JON ADAMS

Required kit

DSLR OR CSC
Any creative camera that can be switched to Manual Focus and set up in a Manual exposure mode is ideal for this project.

TRIPOD
You'll be taking multiple shots of the same scene and your camera can't move between each one. A set of 'sticks' is essential to keep each frame consistent.

IF YOU'VE GOT THE URGE TO make a picture, but are stuck for an idea, this project blends creative and technical skills with a huge, unadulterated dollop of fun! Provided you have a tripod and a camera with controls you can set up manually, you only need yourself to act as the model. What's more, you can shoot it absolutely anywhere, so it gives rise to all sorts of fantastic ideas.

On a recent visit to Dubai, I found myself in a rather lavish hotel suite. I have an ingrained habit of looking for photographic potential wherever I am, so decided to use the room as a ready made 'set' for a self-portrait with a difference. The idea was to fill the room with different versions of me, so I unpacked my case and laid out all the clothes I had with me. A quick change between each shot would create different 'characters', and by posing each of them in different parts of the room, I could get them to interact with each other.

Building the picture in my head was easy using the various spaces and props in the room, and the result would be a far more interesting memento of the trip than a quick snap.

The important thing is to ensure you don't move the camera or adjust the focus point between each shot, and to work fast enough for the light not to change dramatically. Do this, and a multiplicity portrait is really easy to shoot.

The image-editing work in Photoshop is just as straightforward, and over the page you'll find the whole process revealed, so you can give it a go, too.

TECHNIQUE STEP-BY-STEP GUIDE OVER THE PAGE

SET UP AND SHOOT YOUR MULTI-IMAGE PORTRAIT

Find a location with sufficient space for you to place yourself in various poses. A great approach is to start with a room in your house. This will allow you to hone the shooting and imaging techniques before picking more adventurous settings and ideas. A wide focal length is the best choice, and a kit lens set to its widest zoom is perfect. If you're shooting towards the light, engaging your pop-up flash will balance the backlighting and make sure your subject is illuminated.

POSING AREAS
Make sure you've got plenty of places where you can position yourself to act out your scene.

WIDE-ANGLE LENS
You'll want to include a large area in which to position your multiple selves, so zoom back to get a broad angle-of-view.

TRIPOD MOUNTED CAMERA
A solid tripod is necessary to hold your camera in place, as it can't move between shots once you've starting shooting.

Focus on the closest point you'll place yourself and switch to MF to lock the focus distance.

Set up the controls to give an aperture of f/8 and a shutter speed of at least 1/60sec. Manually adjusting the ISO value will allow you to do this.

1 Set up your camera on a tripod and focus manually on the scene

With your camera on a tripod, frame up on your scene and lock off the tripod head. It will remain in this exact position for the duration of the shoot so frame up carefully. Position the AF point over the closest position you'll be. Half-press the shutter to focus, then switch your camera or lens to its Manual Focus (MF) setting. This will lock the focus distance and ensure that every shot is the same. Switch off your image stabiliser if it's activated, as it can cause camera shake on a tripod-mounted camera. Set your camera to record in RAW format, as this will allow you to get the best image quality.

2 Dial in the exposure settings to get consistency in your sequence of shots

With your lens zoomed back, select Aperture Priority mode (A or Av on the Mode dial) and set an aperture value of f/8. This will give a sufficient depth of sharpness with a wide angle lens. Check the shutter speed in the viewfinder. You want it to be 1/60sec or faster, so if it's slower than this, increase your ISO value until you get this figure. Now fire off a quick test shot and check the screen to see that your shot is well-exposed. If you need to make it brighter or darker, hold down the Exposure Compensation button (denoted by a +/- icon) and dial in +1 or -1 as appropriate.

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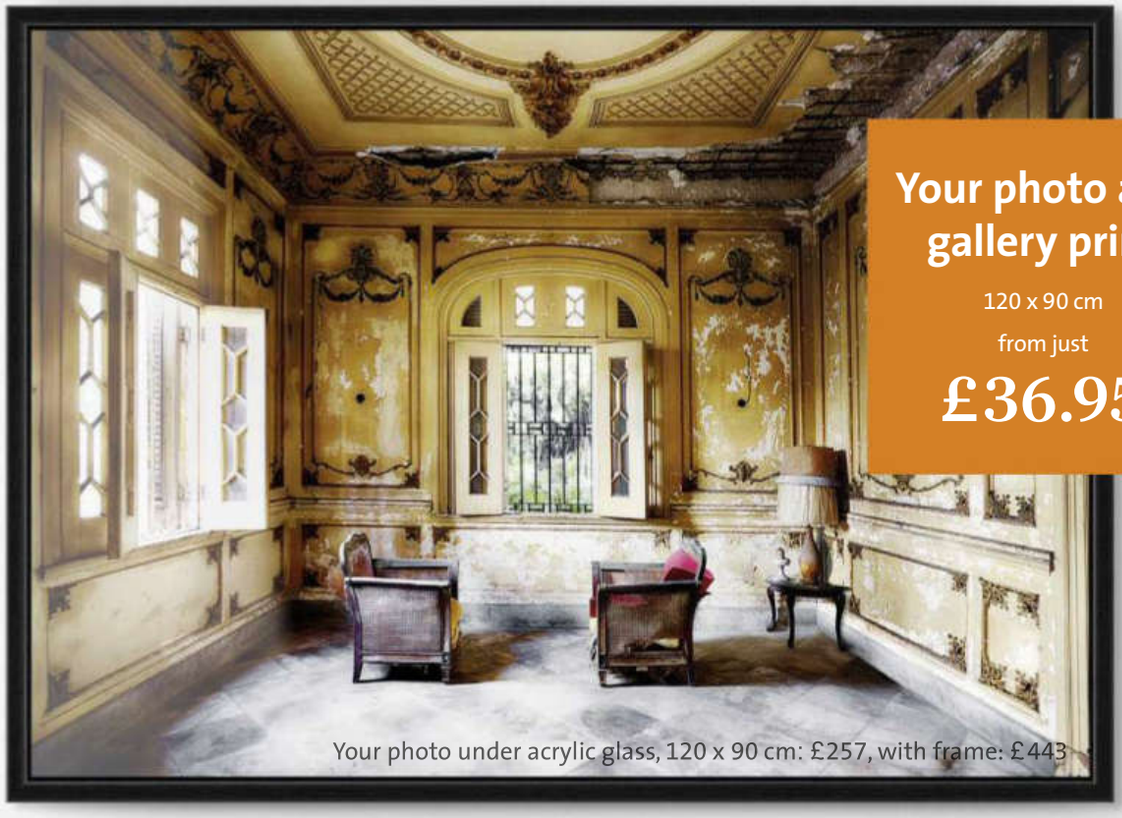

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3 Set the Self-timer, position yourself in the scene, and take your first shot

Set your camera's Drive mode to the Self-timer setting and in the menu, dial in a delay of 10secs. This will give you ample time to get into position after you've pressed the shutter button. Decide on your first position, put on the appropriate clothing, then very gently press the shutter. If possible, do this using a remote release to avoid disturbing the camera. Get into place, assume the appropriate expression to convey your interaction with the other characters in your scene, and take the shot.

4 Take all the remaining shots for your scene using the same camera setup

Check the screen, and if you're not happy with your pose, reshoot until you've nailed the first shot. Now put on your next outfit and fire the shutter before getting into your second position. You need to do this swiftly, as you don't want the light levels to alter between shots. Continue in this way until you have all the shots and poses you need. In the example image, five separate shots were taken, though some were repeated to get the expression or position right. Once you have the shots, the shooting part of the project is complete, and the Photoshop fun begins!

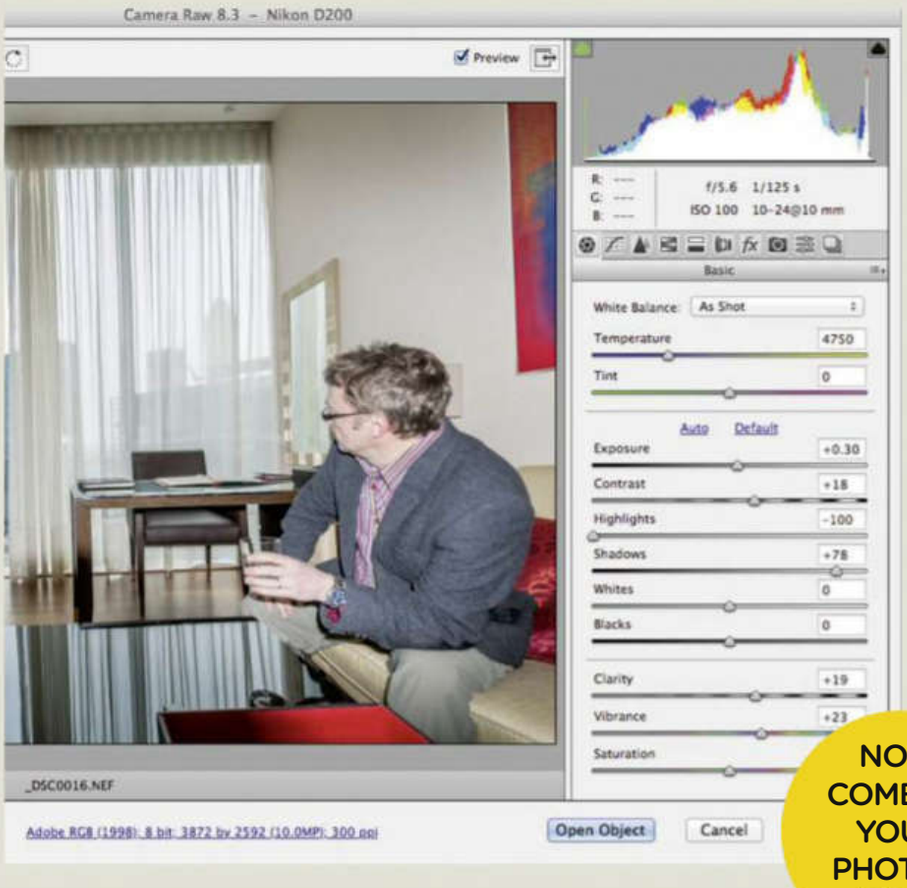
Shoot in RAW format to give you the best quality and the greatest flexibility

Using your camera's RAW format gives you the chance to adjust the contrast, colour and exposure of your images after you've taken them. These adjustments are all carried out in specialist RAW conversion software. If you have Photoshop or Elements, you have all you need, as a RAW converter is already built in.

When you open a RAW file into either of these packages, Adobe Camera Raw will launch and present your picture in an interface that offers lots of options. Although Photoshop offers more RAW features than Elements, certain core components are shared, and one of these is the **Basic** tab. It may be 'basic' by name, but the adjustments on offer here can make dramatic improvements to your image.

The first shot in our sequence of pictures was opened, and the **Highlights** slider was reduced to **-100** to compress the brightest tones. The **Shadows** slider was then increased to **+78** to reveal extra detail in the darker areas. The **Exposure** was lifted a little to **+0.30**, and the **Contrast** was boosted to **+18** to give the pic more 'bite'.

The picture was then opened into Photoshop and saved as a JPEG. To ensure consistency across all of the images, these exact same changes were applied to the other four RAW files. This was done quickly by opening them into Camera Raw, then clicking on the flyout menu at the top right of the **Basic** tab and selecting **Previous Conversion**.



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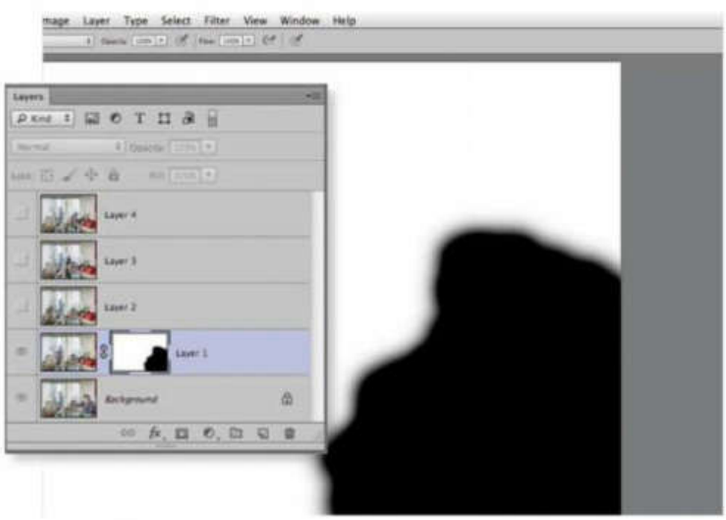
MERGE YOUR SHOTS IN PHOTOSHOP

Blend your set of self-portraits together to create a single image featuring many versions of you. It's easy to do in Photoshop or Elements, but will give you a Layers palette that looks very impressive!

VIDEO LESSON ON THE CD

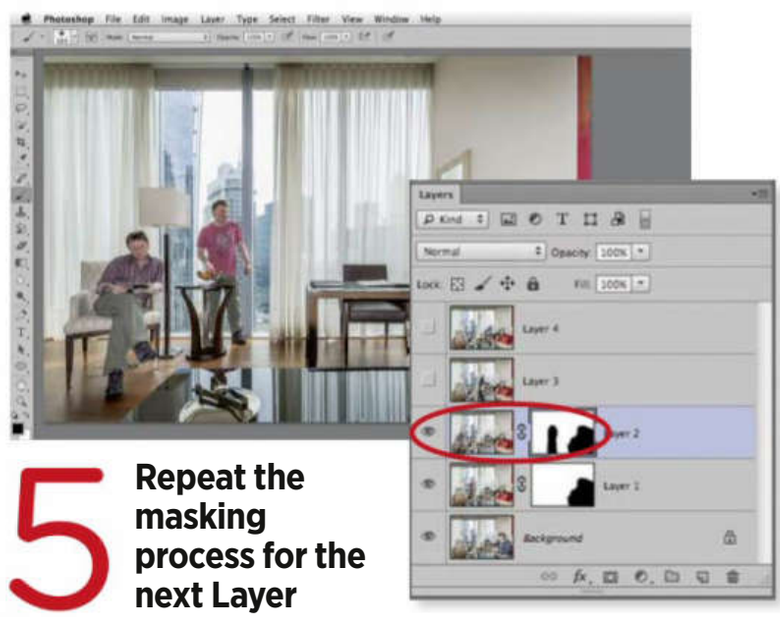
1 Load your pictures into a Layers stack

Open your first shot into Photoshop or Elements, or use *Multi-01.jpg* from the Start Images folder. Leave this on screen, then go to **File→Open** and load your second shot (*Multi-02.jpg*). Hit **Ctrl+A** to select it, **Ctrl+C** to copy it, and **Ctrl+W** to close it down. With your first pic back on screen, hit **Ctrl+V** to paste the second shot over the top. Now open *Multi-03.jpg* and go through the same **Ctrl+A**, **Ctrl+C**, **Ctrl+W**, **Ctrl+V** sequence to add it to the main image. Do the same for the other shots (*Multi-04.jpg* and *Multi-05.jpg*). Look in your Layers palette (**Window→Layers**) and you'll see all your images stacked up together.



4 Check your Mask for accuracy and refine it

It's very easy to leave out parts of a subject when masking, and you only often find out when someone else notices it on a print and points it out to you! To avoid these errors, all you have to do is check your Mask and see that it's complete. Any white gaps within it will spoil the effect, so viewing the Mask on its own will confirm whether you've done a thorough job. The mask's thumbnail in the Layers palette is updated as you paint, but it can be hard to see on a tiny icon. To see the Mask full size on screen, hold **Alt** and click on the Mask's thumbnail. You can now paint out any missing areas directly. When you've finished, **Alt+click** the Mask again to return to the normal view.



5 Repeat the masking process for the next Layer

Click on the 'eye' icon of the next Layer up in the stack, then click on the Layer thumbnail to make it active. In Photoshop, hold **Alt** and drag the Mask from the Layer beneath onto the Layer you're working on to copy it. In Elements, right-click on the Mask's thumbnail and select **Add Mask to Selection** from the drop-down list. You'll see marching ants appear on the image, and all you have to do is click the **Add Layer Mask** icon. The same Mask will appear alongside the Layer. With the Mask active, paint black into it to reveal the new figure from the Layer beneath, just like in Step 3. Make sure you take in any shadows or reflections cast by the figure and **Alt+click** on the Mask thumbnail to make sure it's complete.

2 Set up your Layers for merging the images

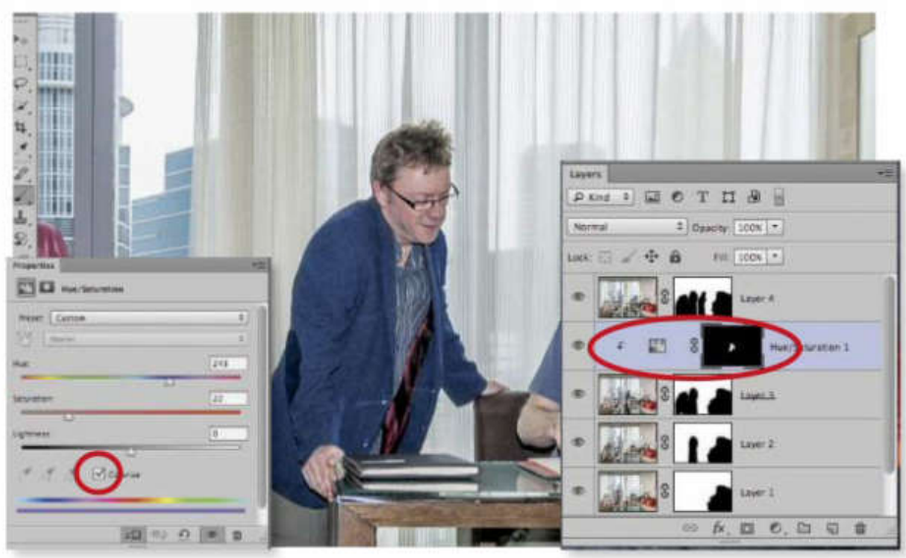
Provided your camera didn't move during your shoot, each pic will line up perfectly with the next. To check this, start with the top Layer and click on the 'eye' icons alongside each Layer. Switch them off, moving down the stack, and you'll see the subject appear at various points in the frame. The task is to reveal them all in the same image. To do this, switch off all Layers except the **Background** Layer and the first Layer above it (Layer 1). Click on the Layer 1 thumbnail to highlight it and make it the active Layer, then click the **Add Layer Mask** icon in the Layers palette. A white rectangle will appear alongside the Layer.

3 Reveal the figure by masking

Hit **D** then **X** on the keyboard to set the foreground colour to black, then select the **Brush tool** (shortcut **B**). Use the square brackets keys to set a medium sized brush around **300px** in size, and make sure it has a soft edge. You can quickly get the softest edge by repeatedly tapping **Shift+[**. Hit **0** (zero) to quickly set the Brush **Opacity** to **100%**, and then paint on the image in the area where the figure on the Layer beneath is. You'll see them magically start to appear! Continue painting to reveal them in their entirety, including any reflections they cast.

6 Complete the masking

Continue the masking work on any more Layers until you have all your figures revealed in the scene. Once you've done this, zoom in on the image with **Ctrl+Plus**, then hold the **Spacebar** and scroll around it, looking at the edges of each figure to check there are no missing parts or ghosting. If you spot any mishaps, find the relevant Layer by switching the 'eye' icons on and off, then click on the Mask to make it active. Paint black or white to fix the problem.



7 Change clothing colours to add extra variety

Your ultimate selfie is complete, but if you want to mix up your wardrobe, you can recolour parts of your clothing. To do this, click on the Layer you want to change, then click the **Adjustment Layer** icon and select **Hue/Saturation** from the list. Tick the **Colorize** box and move the **Hue** and **Saturation** sliders to get the colour you want. Now hold **Alt** and hover the cursor between the Adjustment Layer and the Layer beneath. When the cursor changes, click to clip them together. The Adjustment Layer will jump to the right. Now hit **D** to reset the colours, then hit **Ctrl+Backspace** to fill the Mask with Black. Select the **Brush tool** (**B**) and after zooming in, use a small brush to paint the new colour into the clothing you want to change. Finish painting the item, and then, if you want to refine the colour, go back to the Hue/Saturation palette, and move the sliders to change it.

MASTER YOUR CAMERA

Every month, we explore a key feature found on creative cameras like DSLRs or CSCs, and reveal what it does and how you can use it to boost your skills

METERING

TECHNIQUE & PICS BY BEN DAVIS

THE SUN IS BOTH A photographer's best friend, and also their biggest foe. Bright light conditions are often a prerequisite for well-exposed, handheld photos. But as any snapper will testify, bright scenes can also leave your subject lurking in the shadows, or cause detail to be forever lost in blown-out highlights. There's one easy way to solve this problem, and that's to get to grips with your camera's metering modes.

What is metering?

Metering is the most important part of photography. It's how your camera measures the amount of reflected light in a scene. It's from this information that your camera then sets the required aperture and shutter speed needed for a well-exposed shot. Without correct metering, shots will be under or overexposed, resulting in a loss of detail, and in most cases, a quick press of the Delete button!

However, your camera's lightmeter is far from foolproof, and when the lighting in a scene becomes more complex you can end up with unexpected results. This is because your camera's metering system assumes that the light in the scene averages out to a midtone, where 18% of the light falling onto a subject is reflected back into your lens. But quite often, this isn't the case. The figure of 18% reflectance might sound odd and confusing, but it's the tone that is halfway between detail-less black and pure brilliant white, and is often referred to as 18% grey.

If your scene is largely composed of really dark tones, then your camera will assume they average out to a midtone, and you'll end up with an overexposed shot. The same issue occurs when your scene has lots of light tones, but this time your camera will underexpose the results, as it attempts to render them as midtones.

Metering is how a camera measures the amount of reflected light in a scene

Most cameras have three metering modes, though some manufacturers sometimes offer a fourth.

What is it used for?

Mastering your camera's metering system will allow you to always capture your desired exposure. For the most part, this means shooting well-balanced images, that are neither under nor overexposed, with a good range of tones and detail. Most DSLRs and CSCs have three different metering modes – designed for various light conditions – and selecting the right one for your scene is the best place to start for getting an accurate exposure. There's more to it than this, though, and you'll need to check your shots and make adjustments to the settings if you want to guarantee accurate results.

Sometimes you'll want to take control of the metering to get creative with your exposure, and not rely on what the camera automatically serves up. This is why understanding the ins-and-outs of metering is essential if you want to unlock the most imaginative avenues of photography.

Taking control of your camera's metering mode

Some cameras have a button to switch between metering modes

In the past, photographers measured the light using an external lightmeter, which was placed under the same light source as your subject in order to take a reading. Today, things are much simpler, and a lightmeter is built in to every camera. It can be set to a number of different modes, each designed to measure the light from different parts of the frame. This enables you to take more control.

Some cameras have a switch on the body which can be set to access the different modes. Other cameras have a dedicated metering button, and the different modes are selected by holding this down and scrolling the command dial, with the settings displayed on the LCD. More compact DSLRs and CSCs save space by housing the metering modes within the camera's on-screen menu. Usually though, a Quick Menu button provides speedy access to these settings.

IMAGE SHOT WITH MULTI-ZONE METERING MODE

The bright background has caused the subject to be underexposed.

IMAGE SHOT WITH SPOT METERING MODE

By switching to Spot metering, a more accurate exposure can be taken.

Which of the three metering modes should I use?

The three main metering modes measure the light from different areas of the frame, so you can choose which part of the scene gives priority to the exposure. In most situations, it's best to take the exposure reading from the entire scene. This will then be averaged out to produce a good exposure. This is the simplest of all the modes to use, and in the main it usually comes up with the goods. This mode is often referred to as Multi-zone metering, but is given different names by different camera brands.

For the times when Multi-zone fails to deliver, you can take precise control with the Spot metering mode. This sets the exposure from a small, specific area of the frame, located wherever your active AF point is set. You can use this to prevent overly bright or dark areas from influencing the overall exposure.

The third, and less common mode is Centre-weighted. It hands priority to the active AF point, but also takes into consideration the adjacent parts of the frame.

THE THREE MAIN METERING MODES EXPLAINED

MULTI-ZONE

Multi-zone is also called Matrix or Evaluative metering, depending on the camera brand. It's designed for most shooting situations, and takes light measurements from all over the frame. These are averaged out to produce a balanced exposure.

SPOT

Spot metering measures the reflected light in a very small part of the scene – the area the AF point is set to – and covers 1-5% of the total area of the frame. Use this mode to base the camera's exposure on the most critical part of the scene.

CENTRE-WEIGHTED

Centre-weighted – as the name suggests – gives exposure bias to the middle and feathers out the light readings towards the edge. It's the least used of the modes, as Multi-zone and Spot metering are really all you need for setting an accurate exposure.

Use Histograms to check your exposures

The best way to check your metering mode has delivered a good result is to view the Histogram in conjunction with the image. A Histogram is a graph that displays the distribution of tones in an image, and is a really useful tool to check you're not under or overexposing the scene.

Starting on the left, the information on a Histogram indicates pure black, with each point to the right becoming brighter, passing through the midtones and finishing with pure white on the far right side. You can access the Histogram for your shot by scrolling through the viewing options – normally by pressing the D-Pad up or down.

A Histogram is a tool to see you're not under or over exposing the scene

A 'perfect' Histogram rises gently from the left, peaks with the midtones and gently falls off at the right. But even a correctly exposed shot doesn't always look this way on the Histogram. This is why it's important to check the image itself alongside the Histogram. You'll soon become adept at reading the information.

The main thing to watch out for, is what photographers call 'clipping'. This is where the tones are heavily clumped towards the right or left, indicating that there may be a loss of detail in either the highlights or the shadows.

With a balanced exposure, the Histogram shows a good distribution of tones from left to right.

A Histogram that is bunched up to the left indicates that the image is underexposed.

If your shot is overexposed, then the Histogram will be dominated by tones on the far right side.

Turn on Highlight warning

Most DSLRs offer a way of letting you know if your exposure is losing detail in the Highlights. Sometimes, a loss of detail is inevitable as the tonal range of the scene may be greater than the dynamic range of your camera. By enabling your camera's Highlight warning function, you can keep an eye on your results and avoid capturing blown-out images. Any areas in which the Highlights have 'clipped', will flash on the screen in black, so you'll know precisely what parts of the scene have suffered a loss of detail.

Use Exposure Compensation for a quick fix

If your camera's lightmeter is tricked by an abundance of really dark or bright tones, and gives an inaccurate exposure, you can use Exposure Compensation to fix the error. If you were shooting a subject with lots of brighter tones while using Multi-zone metering, then your camera may be fooled into underexposing the shot, rendering the bright tones as dull greys. It does this because it assumes those tones will average out to a midtone, when in fact they won't.

All DSLRs and CSCs allow you to apply Exposure Compensation, which lets you make the exposure brighter or darker than your camera's lightmeter recommends.

It's possible to add up to two or three stops of Exposure Compensation, with each 'stop' doubling or halving the light. To make a scene brighter, use a positive value such as +0.5 or +1.0, and to make it darker, dial in a negative value. Reshoot, check again, and you'll soon get the desired result.

Most cameras have an Exposure Compensation button, indicated by a 'plus' and 'minus' icon. Hold this down and rotate your command dial to make your exposure darker or brighter.

Spot meter from a midtone to set an accurate exposure

In order to set a truly accurate exposure in tricky lighting, you can use your Spot meter to take a reading from a midtone. Experienced snappers are adept at sourcing midtones in a scene, but how can you be sure you've found one?

A great solution is to use a 'grey card', which is a small device designed to reflect 18% of the light falling on it. Providing your grey card is in the same light as your subject, you'll get a balanced exposure if you Spot meter from it.

However, if you don't have a grey card to hand, there are a number of things to look for within your scene which can be used as a substitute. Nature's reds, grey stone work, grass and foliage, blue denim, and a clear blue sky facing north are all things that reflect around 18% of the light.

To use them, set your camera's metering mode to Spot, and then point your active AF point at one of these items and half press the shutter. With this done, hold down the AE-L button on the rear of your camera to lock the exposure setting, then recompose your shot. Focus on the scene and shoot to capture a perfectly exposed image.

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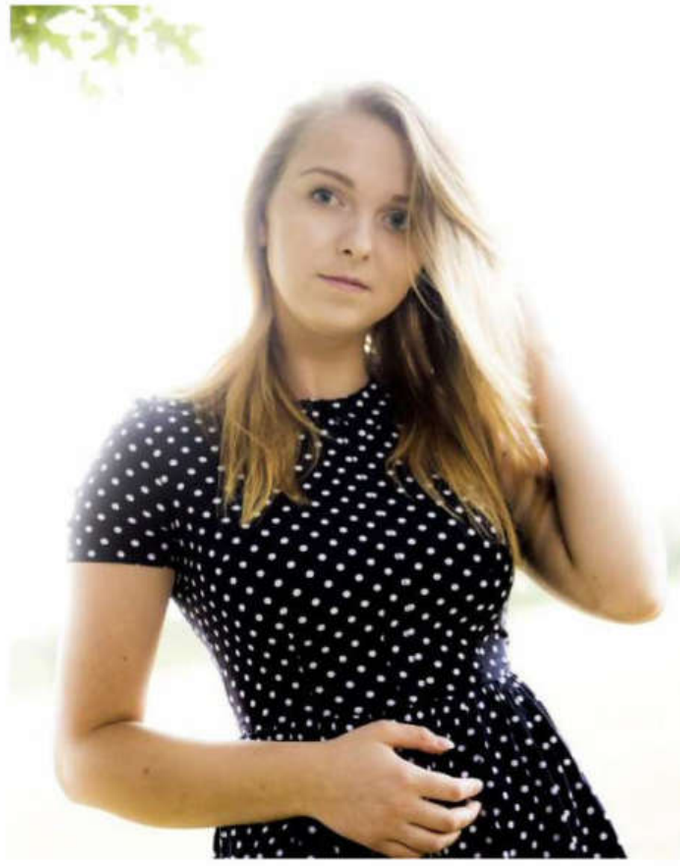
Getting creative with your metering modes

Controlling how your camera reads the light will make the biggest difference to your pictures. It's quick and easy to do, and mastering metering modes will give a huge boost your shooting skills!



1 Set up your camera

In order to take precise control over how your camera measures the light in a scene, you need to set your metering mode to Spot. You can then use this to take readings from specific parts of the frame, and set them as a midtone in the exposure. Set your shooting mode to Aperture priority (A or Av on the mode dial) and dial in a value of f/5.6. Select an ISO of 400, or if conditions are bright, reduce this to 100. If the light is heavily overcast and poor, increase it to 800. Now set your focusing mode to its Single setting (One Shot on Canon models, or AF-S on Nikon). You're now ready to shoot.

2 Create a high key portrait

A 'high key' style portrait involves overexposing the background, so that detail is completely blown out. It's a very stylish and flattering way to capture a portrait, and also removes any background distractions. You'll need to find a place of extreme contrast, such as the shade under a tree, or by placing your subject with the sun over their shoulder. Point your active AF point at your subject's face and then press and hold the AE-L button on the back of your camera to lock the exposure. Keep the button held while you recompose and focus, then take the shot for a great, dreamy look.

3 Shoot a silhouette from the same spot

Having taken a high-key portrait, you can now shoot a silhouette for a completely different style of image. What's more, you won't need to adjust any of your camera settings, or even move your feet!

This time, instead of pointing your active AF point at your subject, direct it towards a bright part of the sky, and then press and hold the AE-L button. This will set the exposure so that the sky is rendered as a midtone, shifting all of the darker tones in the scene towards black. With this button still pressed, recompose your frame and focus up, then take your silhouette shot. Check your results on screen. If you want to make your subject appear even darker, take your Spot meter reading from a brighter part of the sky, hold down the AE-L, and reshoot.

If your camera is set up so that the focus is locked as well as the exposure when the AE-L button is pressed, you can customise the controls. Simply head into the menu system on screen and make sure the AE-L/AF-L button is set to AE-lock only.

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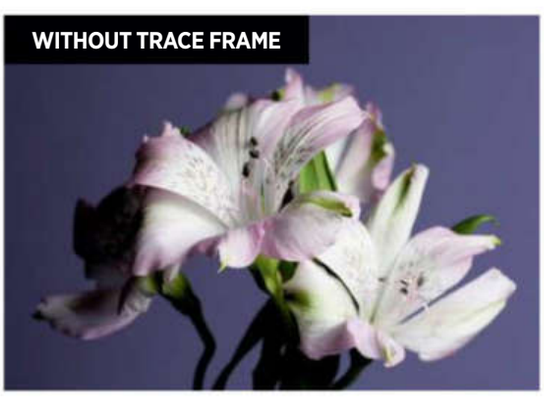
BUILD A DIY TRACE FRAME

Create your own diffuser to soften harsh lighting

LIGHT IS THE MOST IMPORTANT element in photography. Our cameras don't record a subject – they record the light reflected off it. This is worth remembering, as the ability to control the way the light falls will transform your shots. A trace frame is designed to reshape the light, and works like a softbox you'll see on many high-end studio flash units. A trace frame's semi-transparent material diffuses harsh light rays, bathing a subject in much softer, more flattering lighting. If you've ever used your camera's pop-up flash you'll know how unflattering harsh lighting can be. But the fantastic thing is a trace frame will work with any lightsource. From a humble desklamp to direct sunlight, all you need to do is put the frame between your subject and the lightsource to instantly soften the lighting.

The great news is you probably already have the materials needed around your house to make your own trace frame. And while an A4-sized frame is fantastic for table-top still-life shots, you can make larger versions for studio-quality portraits too.

Walk into any commercial studio and you'll find a collection of trace frames, and they're so useful and easy to make that everyone should have one. Ready to reinvent your lighting? Let's get started...



You will need

- A deep picture frame or canvas
- Double-sided tape
- Electrical tape
- Baking or tracing paper
- Scissors

Time needed: 10mins

Four simple steps to a DIY trace frame

1 Dismantle an old picture frame

For this technique you'll need a rigid structure to keep the trace frame together. An old picture frame around 4-6cm deep is ideal and means you won't have to start hammering bits of wood together! The frame depth gives you the option of using two 'skins' for extra diffusion. With a picture frame, remove the mounting board and glass. If you use an old canvas frame, remove the canvas with a staple remover or scissors.

2 Add your first paper layer

You need a semi-transparent material to diffuse the light, so roll out a sheet of greaseproof paper, white baking paper or tracing paper a little larger than your frame. Place your frame on it and draw around it with a pencil while holding it steady. Cut out the shape and attach it to the frame with double-sided tape. This will give a secure fit to the permanent skin on the trace frame. Trim off any excess for a tidy finish.

3 Add a removable second skin

Sometimes you'll want a higher degree of diffusion and a second trace layer on the other side of the frame will provide this. To give maximum flexibility, this skin should be removable so you can quickly detach it. Roll out some more paper and cut it out as in the step before. Then secure it with a loop of electrical tape in each corner.

4 Use your new diffuser

Now that you've created your trace frame it's time to put it to use. Set up a lamp or go outside on a sunny day and place your trace frame between your light source and subject to diffuse the light. Experiment by moving the frame closer to the light source for deeper shadows or move it closer to your subject for softer ones.

Make different sizes

Trace frames cost so little to make but they really expand your creative possibilities. It's a great idea to build two or three frames in different sizes to suit different subjects. The larger your trace frame, the softer the light will become. For smaller still-life shoots an A4 frame is a fine diffuser for a desklamp or flashgun, but for bigger subjects you'll want A2 or larger and will need to lay out multiple sheets to cover each side of the frame. Having different frames really expands your options for creative lighting, and you'll be safe in the knowledge that you can eliminate harsh shadows for any subject – whatever its size!

SHOOT IT NOW

CONTRAST NATURE WITH INDUSTRY

TECHNIQUE & PICS BY JON ADAMS

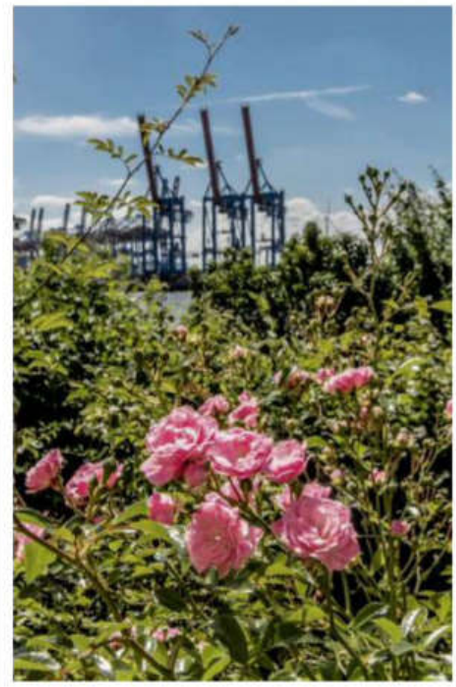
CAPTURING POLAR OPPOSITES IN the same frame is a great way to add a narrative element to your photography. By juxtaposing themes like new & old, rich & poor, or work & play, you can add an extra dimension to your pics that extends beyond the immediate composition and colour.

Two great opposites to look out for on your travels are 'natural' and 'man-made'. Wherever there are signs of civilisation, you'll find both in abundance – all you have to do is find a creative way to combine them. To get a successful shot, one of your opposites needs to dominate and 'own' the picture.

A great way to achieve this is by using a smart camera technique that limits the zone of sharp focus in your shot. This will allow you to hold one element sharp while the other falls away into a soft blur. DSLR cameras open the diaphragm in the lens to its widest setting by default to let the maximum amount of light into the lens. This gives the brightest viewfinder image when you're framing up, and means you'll always see the scene at maximum aperture.

However, at the instant of exposure, the aperture closes down to whatever is set, so the results you capture may look very different from the viewfinder image.

To make sure your depth of focus is exactly the same as what you see in the viewfinder, you can set up your camera to shoot at its largest aperture. This makes it easy to get creative shots that isolate the foreground subject from the background in its own band of focus. It's a technique that's often reserved for pro quality zoom and fast prime lenses, but you can do it with a regular 'kit' lens by setting the maximum aperture and making sure you're physically close enough to the subject. Here's how to set up your camera, so what you see is what you get!



Too much of the scene is sharp in this example. Although it looks the same in the viewfinder, the aperture is set to f/22, giving a shot that's sharp from front to back.

Set up your camera for the largest aperture setting

1 To capture the sharp natural subject and out-of-focus background exactly as you see it in the viewfinder, set your camera to Aperture priority (A or Av) and then dial in the largest aperture setting – this is the lowest f/number and will be between f/3.5 and f/5.6 on most 18-55mm kit lenses. Set the ISO to its lowest value of 100, as with a large aperture, your shutter speed will be quite fast. In the bright, sunny conditions, our scene gave us 1/1600sec.

Find your background & foreground elements

2 Use your industrial location as a skyline, and then seek out a natural subject that can be used for foreground interest to anchor the shot. In our example, we searched along the waterfront until we found a group of colourful flowers. Compose the scene in the viewfinder, and then move the AF target point so it covers the foreground subject. Provided your lens is fairly close to your foreground subject, the background will blur out.

Take the shot and adjust aperture to fine-tune

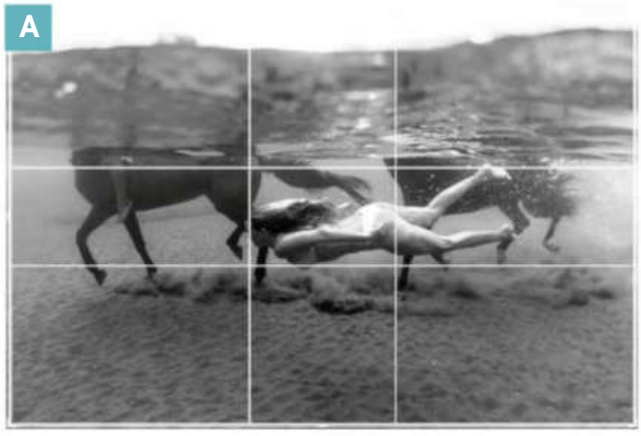
3 Set your camera to its RAW format, as this will give you much more control over the image when you process your picture. Take the shot, and then review it on screen to confirm your subject is pin sharp. If you want the background to show more detail and be less fuzzy, change your aperture to a higher f/number like f/8 or f/11, and shoot again in exactly the same way. This will hold a little more of the scene in focus.

By shooting at the lens' maximum aperture of f/4.5, the natural foreground is isolated from the industrial backdrop in its own band of sharp focus.

WHY THIS SHOT WORKS

Discover what makes **Sarah Lee**'s shot of an underwater swimmer surrounded by horses so powerful

WORDS BY ANDY HEATHER



A GOLDEN RATIO COMPOSITION

When you overlay a Golden Ratio grid over the image you find the subject in the centre of the frame fits neatly within the intersections of the lines. Composing according to the Golden Ratio is thought by many to give more natural and aesthetically-pleasing results than the Rule of Thirds. Grids for both are available in Lightroom by hitting R to activate the Crop tool, then hitting O to cycle through the overlays.

B LOW ANGLE-OF-VIEW

To get a shot of the waterline as Sarah has done it's necessary to half-submerge your camera's lens, using a waterproof housing. One of the most interesting creative choices made in the image is the one to obscure the heads of the horses and their riders, revealing only what sits below the surface. In doing so, Sarah has revealed only what the swimmer can see, making the shot both intimate and subjective.

C FROZEN MOVEMENT

The sand particles in the water, the myriad tiny bubbles, the kicking legs – almost all of the motion in the shot is concentrated in the narrow band running through the centre. It has been frozen with a fast shutter speed so it looks crisp and sharp. Motion blur tends to emphasise movement and make it seem more vigorous, but choosing to freeze the motion has given this image a serenity that suits the subject perfectly.

D A COLOURFUL COUNTERPOINT

Try to imagine this image with the model's bikini the same shade of turquoise as the water. The colour palette would be staid and the image would lack a sense of visual dynamism. This shot works because the bright bikini acts as a strong visual counterpoint to the tones around it. The subject is highlighted by colour as much as by composition.

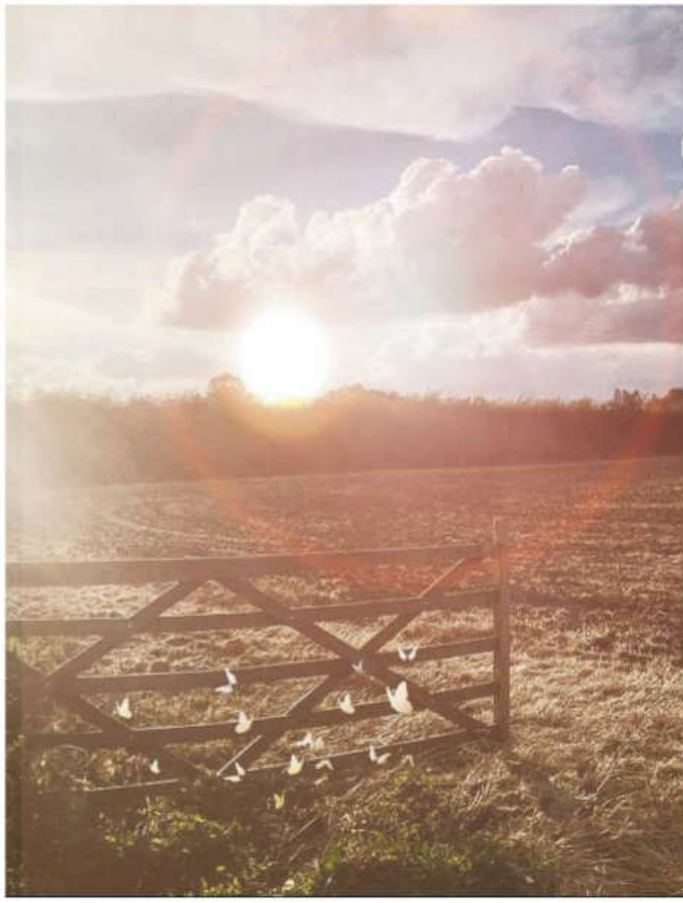
Camera Canon EOS 5D Mark III & 15mm lens
Exposure 1/500sec @ f/4.5, ISO 500
Software Photoshop **Visit** *hisarahlee.com/*

B
C
D

3 EXPERTS **1** EVERYDAY SUBJECT

WHAT WOULD YOU SHOOT?

Take our creative challenge today!



FROM TIME TO TIME, IT'S natural for photographers to fall into a rut with their image-taking. This may be because they tend to shoot the same type of subjects, visit the same locations or even take all their pictures at the same time of day with similar light.

If any of this sounds familiar, then you need to take action to jump-start your photography. A great way of achieving this is to take on our 'Out Of The Ordinary' challenge. The proposition is simple – each month, three of the *Digital Photo* team are given an everyday object to shoot – something that they'd normally pass by on the search for a more worthy subject. With the brief set, it's entirely up to them to bring their creativity to the front to capture an image that's more than the sum of its parts. They can use as much or as little imaging work as they like – all that's important is to make a great picture.

With the inspiration from our experts still ringing in your ears, it's then over to you to put your own spin on the ideas they've used, or go a step further and create your own image from scratch.

You don't need rucksacks full of fancy gear to capture creative imagery. Working with what you have will let your ideas come to life – the only limitations are your imagination.

This month's subject

Our theme this time around will see if an apple a day keeps creative slumber at bay! You're sure to have one in the fruit bowl so there's no excuse not to try turning this everyday object into a creative work of art. If you need a little jump start, take a look at what the *Digital Photo* team came up with....

3 EXPERTS Discover how all these images were created

Andy discovers his inner William Tell

Dan creates a mouth-watering strange fruit

Matty grabs a water spray and aims for a fresh frame

The power of Photoshop allowed several pics to be spliced together to create a dynamic composite image.

SHOT 1

Andy turns to a fabled apple for a seed of inspiration

I'm known as the guy who makes the fantastical composites, so when I heard this month's theme was 'Apple' my imagination immediately conjured up a comical comp based on the old William Tell legend.

The most dynamic angle was to have the arrow flying towards the camera and that meant it had to be extremely large in the frame. For that reason it wasn't going to be enough to create one in Photoshop, I'd have to get my hands on the real thing. I turned to a friend of a friend who makes longbows and he was kind enough to send me an old-fashioned arrow for the shoot.

The comic-book style of the image required that I used foreshortening quite extensively, to give the impression that the arrow was flying towards the camera. To do that I shot it lying on a table and then used Photoshop's Transform command to exaggerate the angle even further. That sadly meant the beautiful, string-bound fletching isn't really visible. On the other hand, a horizontal composite would have been far less dynamic, so I just couldn't have shot the arrow side on.

The most dynamic angle was to have the arrow flying towards the camera

In my garden I took a shot of myself with an apple on my head, then made a hole through it with a corer and shot it again on a table. I did that to avoid getting apple juice on my head! I took a third shot of the chunks of apple I'd removed and arranged them on a coloured chopping board, so they'd be easier to select in Photoshop. A few days earlier, I'd taken a panoramic shot with my iPhone while out walking the dog, and I thought that might make a nice backdrop.

Back at my computer it was just a case of placing each element into its own layer and blending them together. I put myself into the background, then placed the apple onto my head. I comped the small chunks of apple in front of that. Next, I took a shot of Matty as the archer and comped him in behind me. For each shot I used an aperture of f/11 to keep everything sharp from front to back.

Shoot in aperture priority (A or Av on the mode dial) and select a mid-range aperture of f/11 to get the sharpest results from your lens.

Lessons learned

While trying to make all the elements blend, I realised that lighting, as always, is the key. The background image included a bright sunset, so all the other shots had to conform to that lighting. I used a bright studio light behind Matty's right shoulder to make it look like he had a sun setting behind him. It created a nice rim light, but it was a little too white, so I warmed it up a bit in Photoshop to make it resemble sunlight.

You can create your own weird and wonderful fruit mixtures – it takes a matter of minutes in Photoshop.

SHOT 2

Dan creates Frankenstein fruit!

This challenge really got the creative juices flowing. I decided to fuse my apple with another fruit to create a new, alien variety. I was unsure about how to go about doing this, but I thought a vibrant orange would contrast well with a green Golden Delicious apple.

I perused the shelves of a local fruit and veg shop looking for my succulent subjects with as few blemishes as possible – so that I didn't have to clean them up in Photoshop. Back home, I put a sheet of white A4 on a table near a window for natural lighting. I then cut a segment out of the apple using a sharp knife and placed it on the paper. I needed to work fast as I hadn't anticipated the rate at which the apple would oxidize and turn brown. I framed up on my tripod, set the ISO to 100 and used an aperture of f/16 in Aperture priority mode to ensure a good level of sharpness. I then used the 2secs Self-timer and took the shot. I repeated this with the orange which I cut in half.

In Photoshop I opened up the orange pic and made a precise Selection of a single segment using the **Polygonal Lasso tool**. I copied and pasted this into the apple shot and used the **Free Transform tool** (**Ctrl+T**) to resize it and drag the segment into position. I then used the **Eraser tool** to blend in the edges. I found that it was important to include a good amount of the orange's rind in the Selection as this helped to blend it into the apple's flesh. I repeated this with a different orange segment to go inside the apple. Finally, I added a reflection to make it look more realistic. To do this, I duplicated the Layer (**Ctrl+J**), flipped it vertically, lowered the **Layer Opacity** to 20% and moved it into position.

This month's challenge took a little bit of time to set up and create, but I'm enjoying the fruits of my labour as a result!

I perused the shelves of a local fruit and veg shop to find my succulent subjects

This idea is simple and requires only a few items that you probably already have at home, so it's well worth giving it a go!

Lessons learned

Once you've cut into your fresh fruit you only have a small window of time before the oxidization process begins and its colour starts to change. It's a wise move to frame up and get your settings right in-camera before making the cut.

SHOT 3

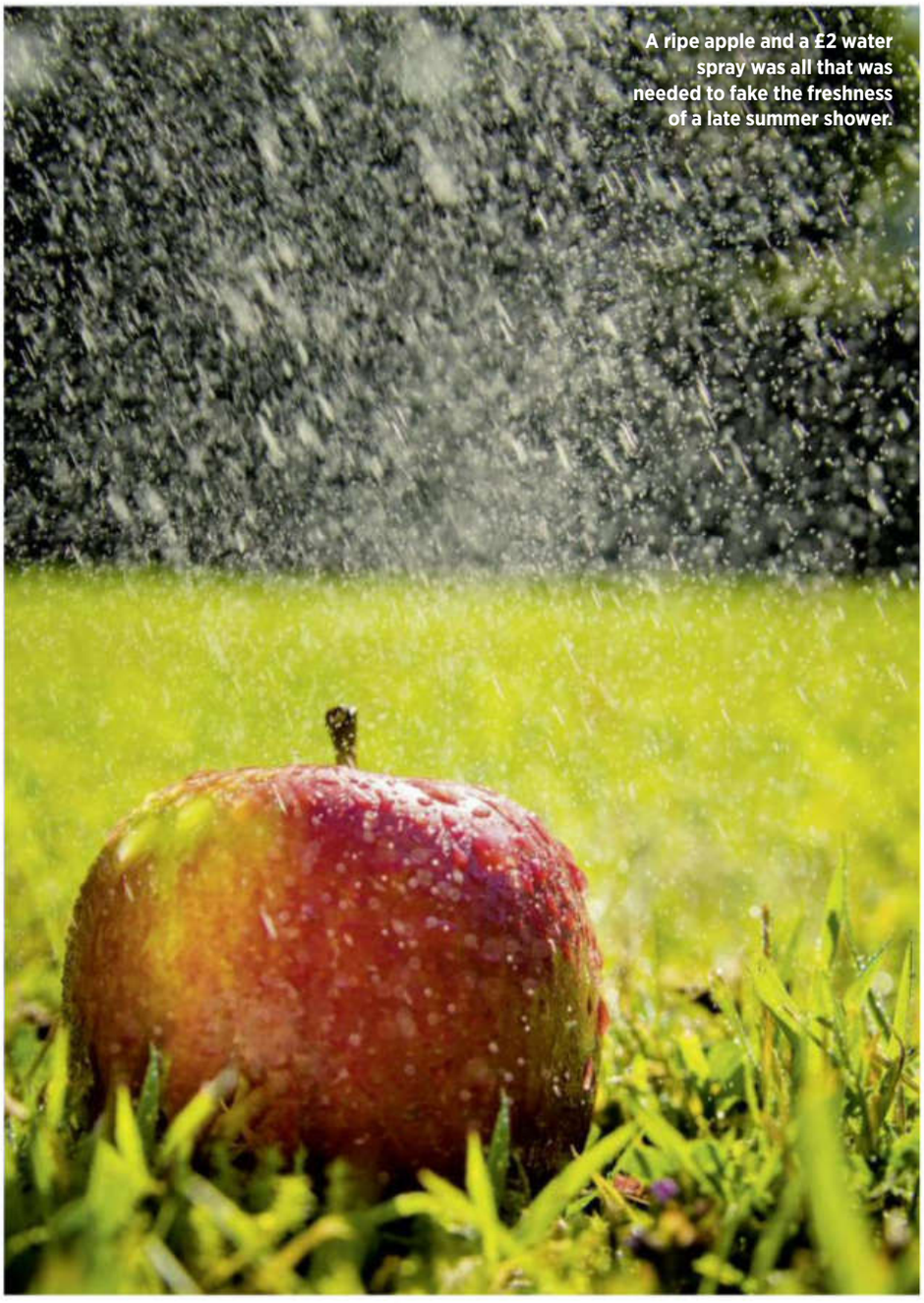
Matty gets fresh with a spray of water

I love shooting still-lifes, so when this month's theme was revealed as an apple, the cogs soon began to whirr. It wasn't long before I had come up with a simple, yet effective, way to make my apple image come to life. To convey the freshness of my ripe subject, carefully picked from the supermarket shelf, I used a secret weapon that would not only enhance the mood in the scene, but would also create bokeh – the specular-shaped halos that occur when shooting into the light with a large aperture. The weapon of choice was a simple garden water sprayer, which cost just £2 from the local supermarket. By selecting f/2.8 (the largest aperture my lens would allow) and spraying a mist of water over the apple as I shot towards the sun, the magic started to happen.

Not only did the apple take on extra texture with a coat of droplets, but the backlit water drops hanging in the air helped create that attractive bokeh I was seeking.

The backlit water drops helped create the bokeh I was seeking

Shooting into the light did result in my picture being a little underexposed (see above), but because I always shoot in RAW format, it was a simple job to brighten the frame in Lightroom by dragging the Exposure and Shadows sliders to the right. I boosted the Saturation, too, to give the reds and greens extra punch. With the fake rain and zingy colour palette, this should make even the driest mouths water!



A ripe apple and a £2 water spray was all that was needed to fake the freshness of a late summer shower.

An simple water spray was used to provide both a portable summer shower and add a sense of extra freshness to the subject.

The camera original was a little dark and underexposed, but because I'd shot in RAW it was easy to adjust the sliders in Lightroom to get a perfectly-exposed result.

Lessons learned

I shot one image at a time, but a better idea is to activate your burst mode. Holding the shutter, multiple images will be taken, increasing your chances of capturing the perfect moment when the water spray is backlit by the sun.

Send us yours!

Now you've seen what the team has produced, have a go yourself.

Send us your shots and they could appear in the UK's top photo mag! Email pics to: *dpimages@bauermedia.co.uk*

An aperture of f/16 cast a large depth-of-field on this view of the Virgin River cutting through towering sandstone cliffs in Zion National Park's famous Narrows, in Utah.

DESERT RICHES

Peter James' fine-art landscapes shed new light on the charms of America's deserts

WORDS BY MATTY GRAHAM

AROUND 70% OF THE EARTH'S surface is covered in water. And, if you ask the average person to describe the polar opposite of a sea, ocean or lake, they will most likely suggest a desert. What's more, they'll conjure up a picture in their mind's eye of an arid, hostile place where most life has been scorched from existence. The reality can be quite different, and US photographer Peter Coskin (who shoots under the name Peter James) uses his camera to reveal the beauty of the desert landscape.

Peter grew up in the urban sprawl of Philadelphia and admits the outdoors was not his first love. "In 2002, my family moved to Arizona, and slowly but surely, the desert landscape grew on me," explains Peter. "I've always enjoyed photographs – I just never expected to be the one taking them. But after dabbling in photography in high school and then community college, I became hooked."

Peter's endeavours at school enabled him to learn the basics, shooting on film, before graduating to a college course focusing on digital photography. Through this early immersion in the art, his interest soon gained momentum. But while many photographers find a passion in sports, portraiture or macro photography, it was Peter's new surroundings – and its inhabitants – that first drew his attention.

"I started photographing wildlife, almost exclusively in my first two years. I had gone to Yellowstone Park with a friend in 2010 and focused so much on the wildlife that I completely overlooked the beauty of the landscape," says Peter.

The following year, Peter made a pact with himself to capture more landscape pictures to keep his portfolio diverse. But a trip to Moab in Utah to photograph natural rock arches tested his resolve. "That week was one of my worst-ever photographic trips. We endured hot conditions and struggled for locations, but I learned a lot about the difficulties in

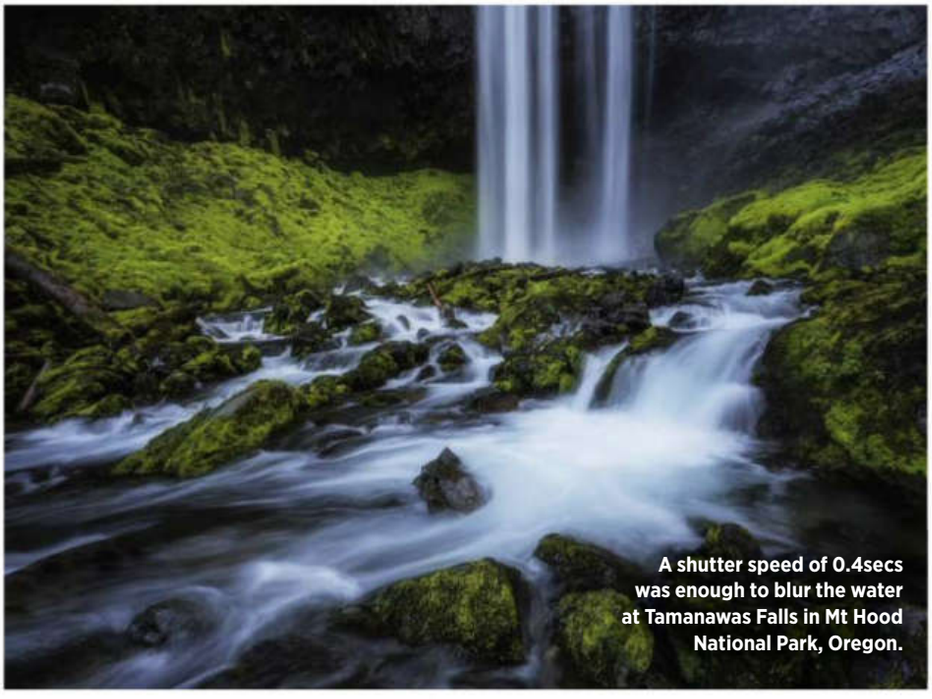
Who is Peter James?

Based in Arizona, Peter James is a fine-art nature and landscape photographer, who has captured stunning imagery all over the United States. His photos have won awards and can also be bought as large prints from Peter's website, *www.pjcphotography.com*. You can also follow Peter on Instagram – just search for *peterjamesnaturephotography*.

Peter arrives at locations early to take advantage of the cool, pre-dawn light. This soothing shot of layers of sand in Death Valley was captured at 7am.

landscape photography," he remembers. "It triggered my lust to venture to new places and travel more. The following year I made a solo trip to the Eastern Sierra region of California, and from the start of that shoot, I knew I'd found the type of photography I wanted to pursue."

Peter's landscape photography continued to improve, thanks in part to him searching out professionals and asking for their critique, but also to his evolving post processing techniques. He also developed a sense for the two qualities found in every great landscape: composition and light. "Having a strong, balanced composition is my most important goal when creating an image," explains Peter. "The light can be hit or miss, but ultimately you have to have that strong composition you've scouted out when the light hits. It is often the reason I'll return to a location. Sometimes though, the light can be tough and you just have to get creative."



A shutter speed of 0.4secs was enough to blur the water at Tamanawas Falls in Mt Hood National Park, Oregon.

Getting creative in a lush green forest is one thing, but what about the more arid environment of the American south west? Peter says the desert is one of the most beautiful landscapes he's ever photographed but also one of the most difficult. "You get a lot of repetition in desert scenes, and many photographers go to the same places. The sandstone landscapes and unique rock formations of Northern Arizona and Southern Utah attract the most people, and for good reason," he explains. "But that leaves the Sonoran desert relatively unexplored by the travelling photographer." The Sonoran desert is vast at over 110,000 square miles and is shared by California and Arizona plus two states in Mexico. "It's over 100 degrees for half the year, so that might be another reason it becomes overlooked."

Strong composition that is balanced is my most important goal

The area Peter regularly photographs in south west Arizona gets around 300 days of complete sunshine every year. As a landscape photographer, he craves cloudy skies to

Peter works almost exclusively with a tripod, which is essential when using longer shutter speeds. This barrel cactus in the Superstition Mountains, Arizona, required an exposure of 1/15sec @ f/14 in the first light of the day.

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The wide end of Peter's 16-28mm lens was use to capture autumn aspens reaching to the sky in Arizona's high country.

create dramatic lighting situations. The summer monsoon provides the majority of those cloudy days, and also brings dramatic lightning and thunderstorms, which can pose safety issues for photographers away from shelter. At ground level, photographing around cacti is just as challenging as avoiding lightning strikes, as Peter has to watch where

I like my images to bridge the gap between dreams and reality

he steps to avoid the needles. To combat the intense heat, Peter covers his camera with a light-coloured towel. "You'd be amazed at how hot a camera body will become standing in desert sun!"

With blistering heat, storms and cactus needles, you'd think Peter has enough to deal with, but there's also the wildlife. "I've almost stepped on a few rattlesnakes while shooting in the desert, and on another trip in Montana, I took a solo hike up to Hidden Lake. I was in complete fog with grizzly bear warnings everywhere around me." Peter has also been stalked by mountain lions on more than one occasion in the Superstition Mountains near Phoenix, Arizona.

But the risk pays off and Peter has developed a creative style, with his images boasting a painterly quality. "I like my images to bridge the gap between dreams and reality," he explains, and says his post processing for just one image can range anywhere from 10 minutes to days on end. A lot of Peter's edits revolve around using RAW adjustments and blending multiple exposures for dynamic range and depth-of-field. Often Peter will process an image five or six times if he feels like he hasn't achieved the right look. If it takes longer, he'll park the image for a while, move onto another picture, and come back to it later.

Quickfire questions

Which photographers inspire you?

The biggest inspiration has been Marc Adamus. I remember seeing his work for the first time in 2007 before I really got into landscape photography. His pictures were always captivating to me and were the types of images I would hope to achieve some day. Other notable photographers that have inspired me are Galen Rowell, Ryan Dyar, Gary Ladd, George Stocking, and David Muench. The list could go on and on, but these guys have been pretty influential on my work. They all have a specific look to their images which I can usually recognise.

What is your go-to lens for landscape photography?

The Tokina 16-28mm is my primary wide-angle lens. It has a constant maximum aperture of f/2.8 through the zoom range and its quality impresses me.

A 5am start was rewarded with this stunning image of a small seasonal pool reflecting cloudy skies in Northern Arizona.

Discover the gear that Peter uses for desert landscapes

Peter's Oben tripod and ball head supports his Canon EOS 6D with 70-200mm & 17-40mm lenses, but his most-used optic is a Tokina 16-28mm f/2.8 zoom.

Because of the harsh terrain and intense heat he encounters on desert shoots, Peter chooses to keep his pack light. The lens that spends the most time attached to his 20.2Mp full-frame Canon EOS 6D is the Tokina 16-28mm. This ultra wide-angle zoom is perfect for landscape photography as the focal length not only captures a broad view but also stretches the perspective of the foreground, giving extra emphasis to subjects close to the lens. Peter's travel tripod enables him to keep his camera rock-steady. This is particularly important to avoid camera shake when shooting in dimmer light conditions at the start and end of the day.

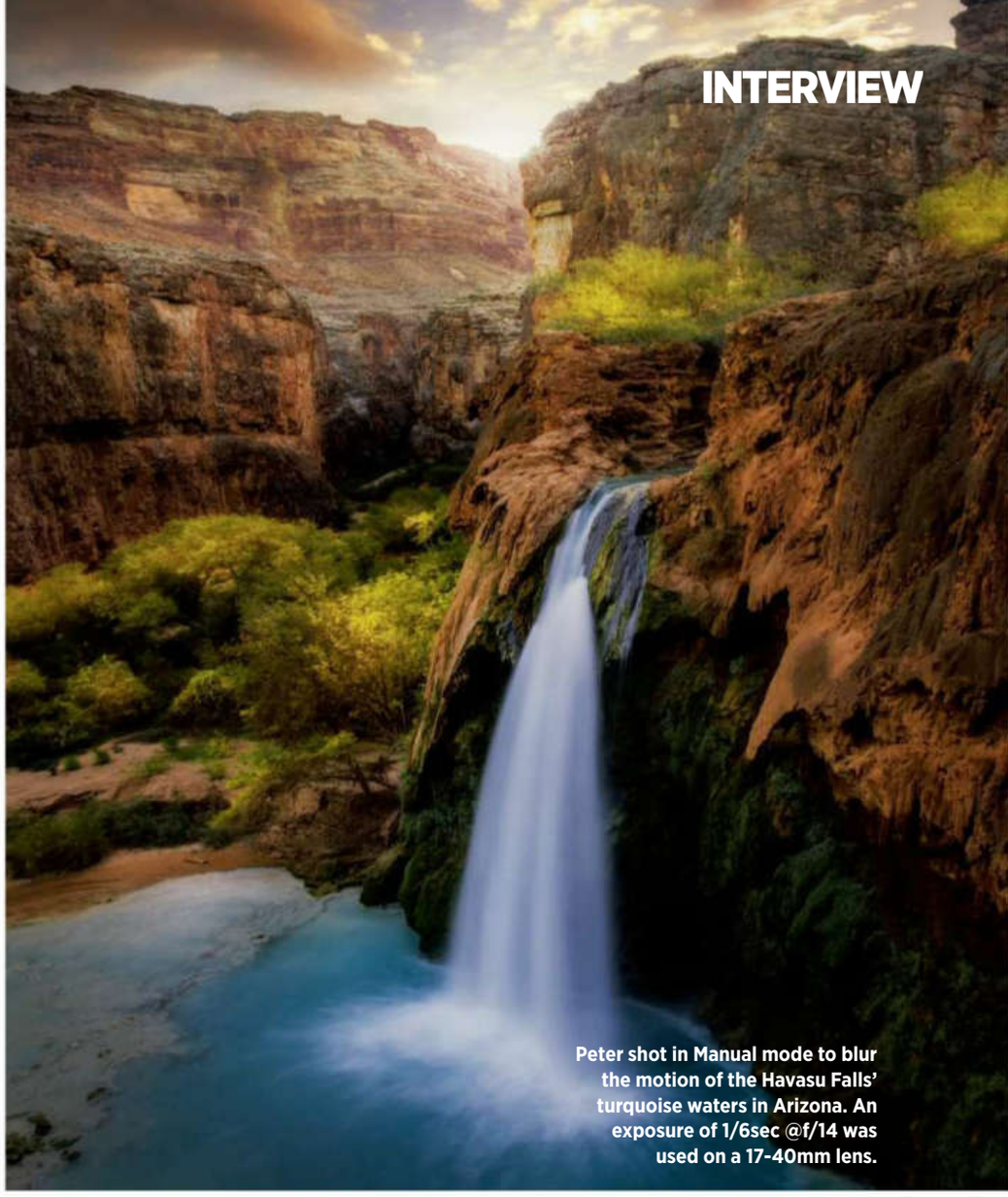
Processing his images takes time, but so does scouting locations – especially when they're in the middle of a huge desert. Peter sometimes uses Google Earth software to take a closer look at the lay of the land, but on other occasions, he'll chance his luck and simply set off to find something new.

To capture his images, Peter pairs his Canon EOS 6D full-frame body with 16-28mm, 17-40mm or 70-200mm lenses. All his kit is carried in a lightweight Clik Elite Venture 35 bag. "My Oben CT 3481 tripod is my most essential item of kit. I rarely take the camera off it, so if I forgot it, I wouldn't have many shots to show from a trip."

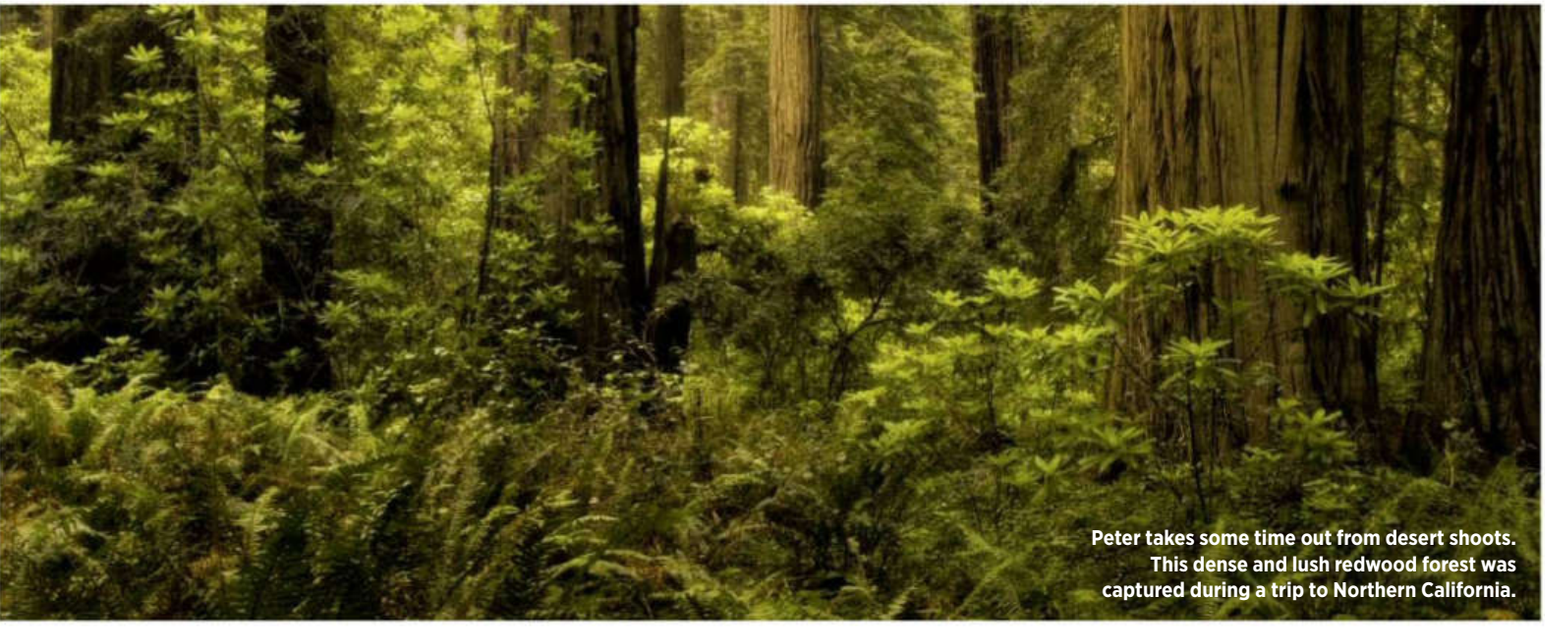
Peter is a photographer who braves the elements to capture amazing images of locations few have seen. This drive and determination is reflected in his advice for those wishing to follow in his footsteps. "If you are inspired by my work, do what I do and get inspired by the many other great photographers out there. Then go out as often as you can to try and capture the beautiful landscapes that are out there," he suggests. "Take the time to get your images critiqued by a photographer you admire, and be able to take what they have to say – brutal and honest as it may be." Peter's own images are rapidly gaining in popularity, judging by the 3 million views his online images have received on *500px.com*, and his thriving print business, where images can be ordered from his website. "I seem to get a lot of good feedback from some high profile photographers, as well as from those looking to improve their craft who get inspired by my images."

The future is looking as bright as the Arizona sun for Peter and his photography. Over the next six months he is planning to start offering workshops and tours around the south west of the US, in areas including the Moab and Sonoran desert. He also has his sights set much further afield for future projects on other continents. "I have a very long list of dream locations that I hope to visit someday. Some of those include Greenland, Patagonia, the Himalayas, the Dolomites, the Galapagos Islands... To be honest, the list is diverse in its geography and never-ending!"

We get the feeling that, for desert-lover Peter, the photographic adventure is only just beginning.



Peter shot in Manual mode to blur the motion of the Havasu Falls' turquoise waters in Arizona. An exposure of 1/6sec @f/14 was used on a 17-40mm lens.



Peter takes some time out from desert shoots. This dense and lush redwood forest was captured during a trip to Northern California.

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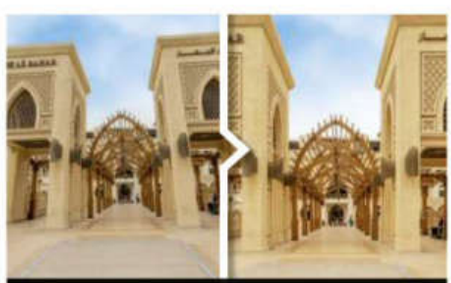


Pull your pictures into better shape

Straighten shots with Transform p84

Bring out the colours of sunsets

Convert RAWs the right way p86

Restore detail to catch the eye

Sharpen images selectively p90

Show off your shots with a pro finish

Present pics with free frames p92

ON YOUR EXCLUSIVE PHOTOSKILLS CD THIS MONTH

LEARN THE EASY WAY WITH OUR CRASH COURSE OF EXPERT VIDEO LESSONS

LEARN CORE PHOTOSHOP

NOWADAYS, EVERY PICTURE YOU see published has been digitally enhanced. The changes made may be subtle tweaks or extensive reinventions, but the post-processing of images is part and parcel of modern photography.

The most popular software across the planet for making these adjustments is Photoshop (or one of its versions – see right), and over the coming pages, our team of experts show you how to use it over a series of tutorials and accompanying video lessons.

Whether you're a newcomer taking your first steps in imaging, or a more seasoned photographer looking to make your imaging more productive, you'll find our advice, tips and techniques will provide a thorough grounding in the stuff you need to know. From core skills like cropping and sharpening to more advanced techniques like RAW conversion and using Layers, you'll find these guides to be indispensable as you earn your spurs in Photoshop!

Learn by doing

Since 1997, *Digital Photo* has been helping photographers achieve their potential, and one thing we've discovered is that people learn by *doing*. Our clear, step-by-step guides take you through the image-editing process, and the very pictures used by our experts are supplied in the Start Images folder on the disc, so you can load them up and follow the exact technique in your own software.

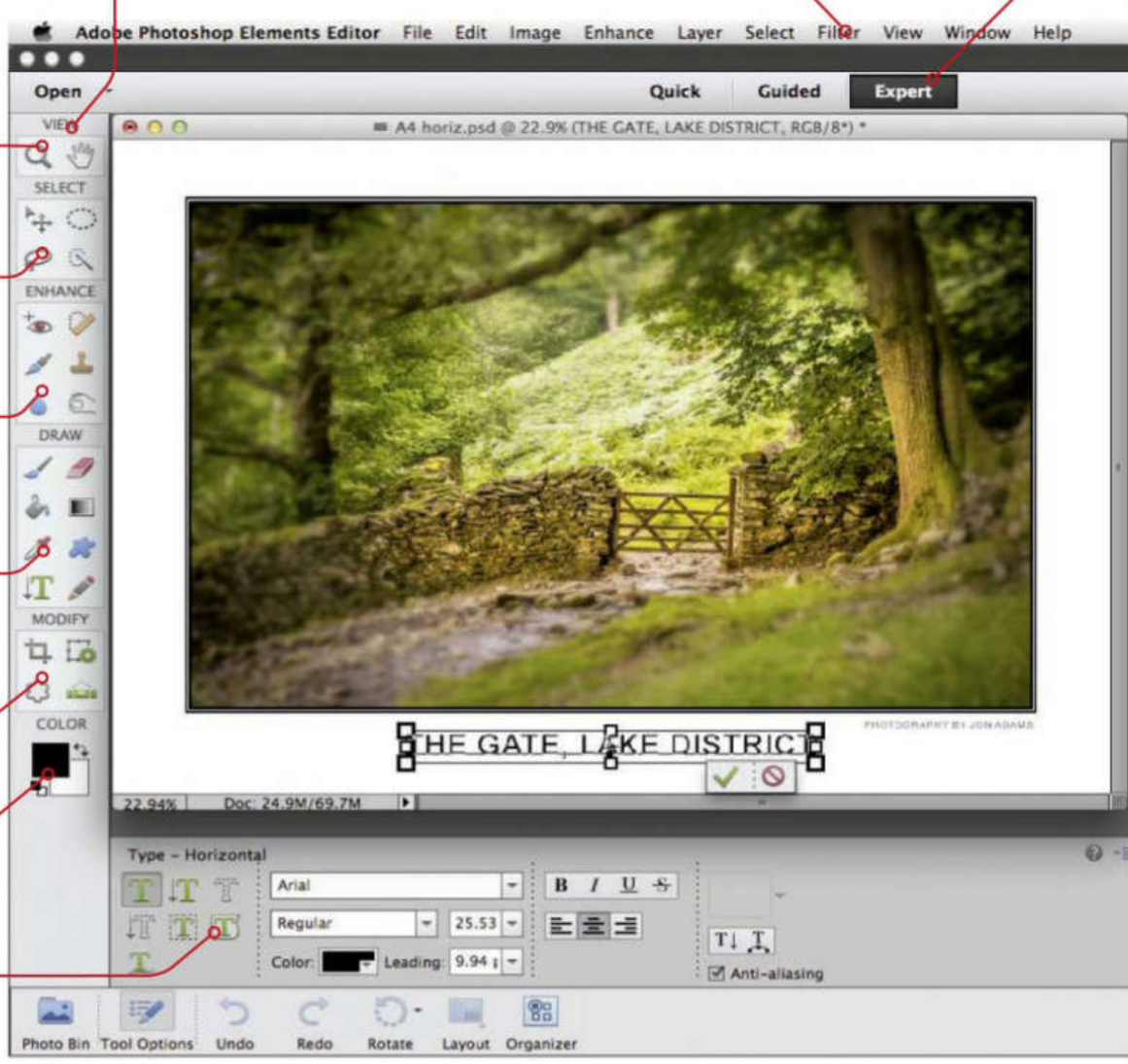
What's more, all our projects are supported by exclusive, in-depth video lessons, produced by the same team. These guide you through the project from start to finish, and you can watch them over and over until you've got the technique cracked.

It's a fast, highly effective way of learning, and by using the videos in conjunction with the tutorials in the mag, you'll have a sound command of the skills you need to improve and enhance every picture you take!

PHOTOSHOP ELEMENTS THE CORE FEATURES & FUNCTIONS

TOOLBOX
This palette contains all the tools used to make changes. Click on a tool to select it, and further options will appear in the Tool Options bar.

MENU BAR
Each item in the menu bar at the top gives access to a drop-down list of options. If our tutorials ask you to go to **File→Open** or **Window→Layers**, this is where you do it.



VIEW TOOLS
Zoom in and out and scroll around the picture to work on small or large areas.

SELECTION TOOLS
Select a specific area of a picture so it can be edited independently.

ENHANCE TOOLS
Make changes to the pixels within a picture or a part you've selected.

DRAW TOOLS
Paint, erase or add text to your image using these features.

MODIFY TOOLS
Crop or recompose to alter the size and shape of the entire picture.

COLOR TOOLS
Choose the foreground and background colours that the tools will use.

TOOL OPTIONS BAR
Set up the tool you've selected so it works in the way you want it to.

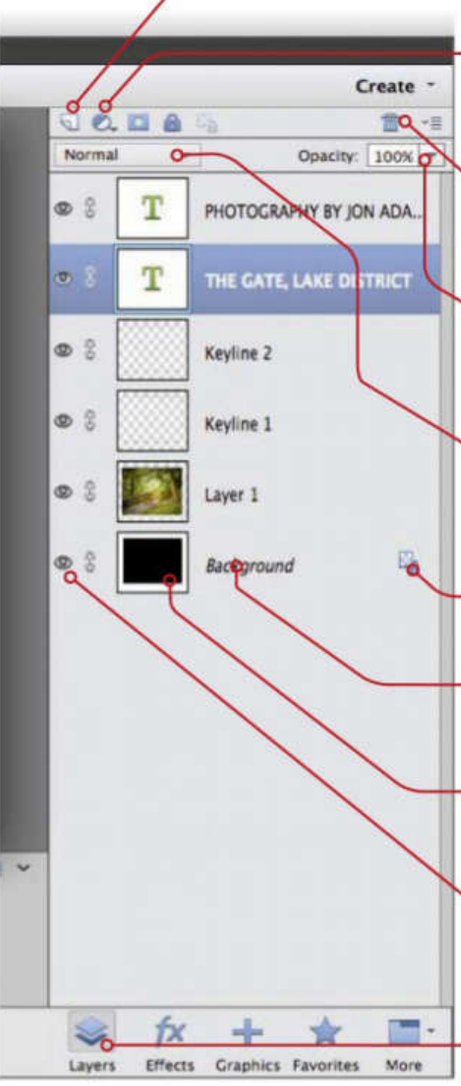
SKILLS – IN A DAY!

Learn with DIGITAL PHOTO

1 Watch the video lesson
Load the disc, click on the video you want to watch, and our experts will walk you through.

2 Follow the steps
Open the start images into your software and follow the tutorial in the magazine.

3 Produce a pro image
Complete the project then use the technique you've learnt to enhance your own shots.



EXPERT MODE
Click on this to enter the most feature-rich display mode for all projects.

LAYERS PALETTE
One of the most important palettes for creative imaging work, this is a core feature of Elements and Photoshop.

CREATE A NEW LAYER
Click to make a blank Layer.

NEW ADJUSTMENT LAYER
Click to bring up a list of Adjustment Layer options, and choose the one you want.

TRASH
Get rid of unwanted Layers by dragging and dropping them on this icon.

LAYER OPACITY
A slider lets you fade a Layer between 0% (transparent) and 100% (fully opaque) to control how it appears.

BLENDING MODES
A drop-down list lets you select from a large number of choices to affect how the Layer interacts with the Layer below.

LAYER LOCK
This icon means the Layer is locked and can't be edited.

LAYER NAME
Double-click here to give the Layer a new name.

LAYER THUMBNAIL
A small-scale image to help you identify the Layer's contents.

SHOW/HIDE LAYER
Switch Layers on and off so you can see their effect.

PANEL OPTIONS
Layers is the default, though you can display other options, or customise your workspace under the More icon.

Image editing software options

PHOTOSHOP ELEMENTS 13 £60

Photoshop Elements is the stripped-down version of Photoshop targeted at enthusiasts. It offers the core features that photographers need and sports a similar interface to the professional Photoshop CC. Along with Layers, Layer Masks and a host of Selection tools, Elements offers a basic but effective version of Adobe Camera Raw for editing and enhancing RAW files.

PHOTOSHOP CC £8.57 MONTHLY

Photoshop CC (Creative Cloud) is the professional version of Photoshop. It's only available as a subscription, so you pay £8.57 monthly to use it. The deal includes Lightroom 6 so there's no need to buy this separately. As well as the tools in Elements, Photoshop offers Curves, the Pen tool, and Color Balance. It also features an advanced RAW converter, which shares the same RAW engine as Lightroom 6.

LIGHTROOM 6 £104

Photoshop Lightroom is a RAW workflow package offering a pro-level RAW converter and image management features for cataloguing your shots. It shares the same RAW conversion functions as Photoshop CC, but has a different interface. Lightroom doesn't feature Layers for creating shots with multiple images, but many photographers who don't want to subscribe to Photoshop CC find a combination of the standalone Lightroom and Elements meets their needs.

▶ *For more info on the above packages, visit www.adobe.com/uk*

Opening pics into Photoshop

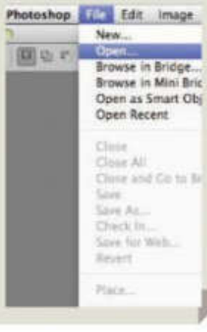
A card reader is the easiest way of transferring pics from your camera's card to a computer. Most PCs and Macs now have an SD card slot built in. Drag the pics from the card reader to a new folder you've created and named to copy them. Once copied, they can be opened...

1 Load Photoshop, then go to **File→ Open** and navigate through your folders to find the pics. Click on the shot you want, then click on **Open**.

2 Open the folder with your pics in, and right-click (Ctrl+click on a Mac) on the file you want to open. From the options, select **Open With→ Photoshop** (or **Elements**).

3 Open the folder with your pictures in, and drag and drop the shot you want onto the PS/PSE icon.

4 Open your picture folder, then drag and drop the pic you want into the main workspace window in the Photoshop/Elements interface.



FIND A NEW ANGLE WITH THE CROP TOOL

At a glance

YOU'LL LEARN How to use the Crop tool to recompose effectively
YOU'LL NEED Photoshop or Elements
TIME REQUIRED 5 minutes
DIFFICULTY LEVEL Easy

On the disc

VIDEO LESSONS Watch as Dan runs through this technique from start to finish live on your computer screen.
START IMAGE Use one of your shots you'd like to crop or open the *Portrait crop.jpg* picture from the Start Images folder.

Photoshop's often overlooked Crop tool is a powerful compositional aid that can help you frame your pics

TECHNIQUE BY DAN MOLD

AFTER YOU'VE OPENED AN image into Photoshop, the first thing you need to do is decide whether or not you want to crop it. There's no point spending time making adjustments to an image if you'll end up cropping them out, so choosing your crop first means you'll only be working on the pixels you really want to keep. Despite the Crop tool's rather obvious-sounding name, it's actually one of the most creative weapons in Photoshop's armoury.

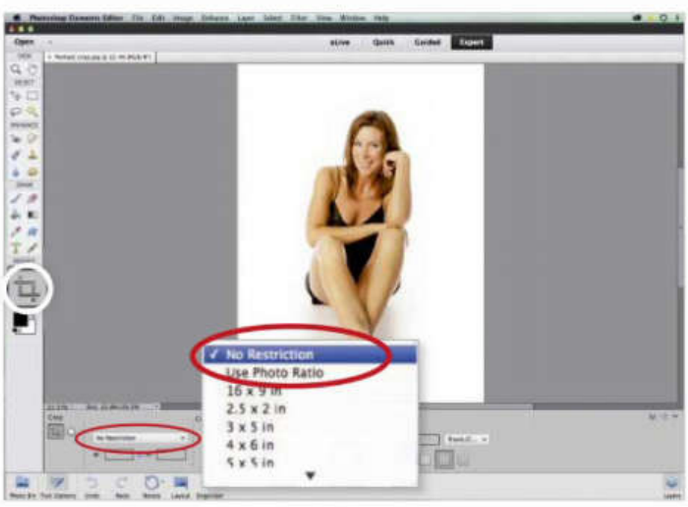
With the Crop tool, you can give a standard pic the look of a panorama, transform it into a retro, square format shot, or turn a horizontal frame into a vertical one.

Aside from creative tasks, the Crop tool is also brilliant when you're organising a set of pictures to send off to a print lab. By saving your crop as a preset, you can quickly run through a batch of pics and crop them to the right size and resolution before uploading them to the lab's website.

We'll run through the main features in the step-by-step below. Read through and practise the techniques with the Start Image, and you'll soon discover the Crop tool has far more uses beyond trimming off unwanted edges.

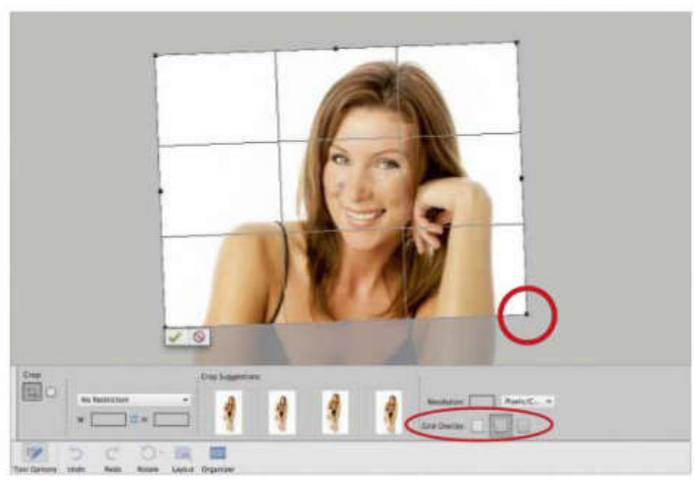
BEFORE

This portrait has quite a loose composition, and would benefit from a variety of different crops, from horizontal to square framing.



1 Set up the Crop tool

Open your pic into Photoshop or Elements, or use the *Portrait Crop* pic from the Start Images folder. You'll see that the image is a little too loose in its framing and needs to be tightened up. Select the **Crop tool** from the Toolbox. In the Tool Options bar there is a drop-down box that allows you to change the **Crop Preset Options**. Here you can set the crop to use the same aspect ratio used by the camera, or a different one altogether. You can also input a bespoke aspect ratio using the accompanying **Width** and **Height** boxes. For full creative cropping freedom you'll want to lose the restriction completely, and this mode has a different name depending on which version of Photoshop you have. Elements users need to click **No Restriction**, Photoshop CC users need to click **Ratio**, and users of older Photoshop versions will need to tick **Unconstrained**. They all do the same thing!

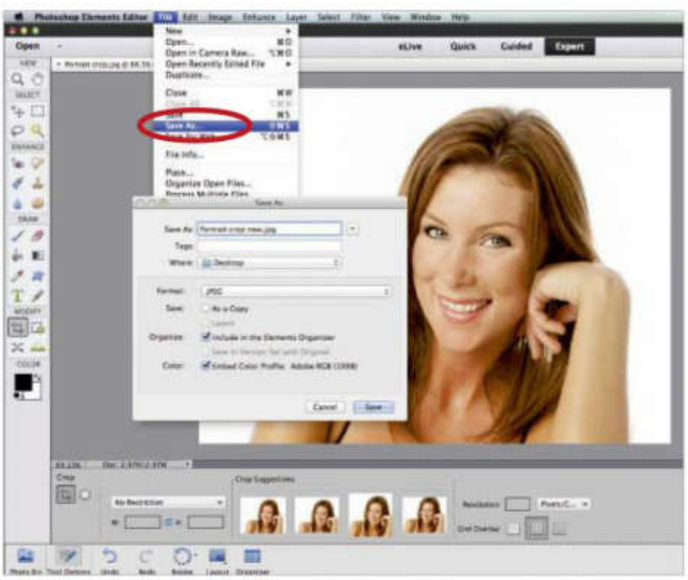


2 Experiment with different crops

Now drag out a rough crop shape for your shot. Release the mouse, then fine-tune the crop by dragging the side handles in or out to get the exact framing you want. With a little experimentation, you'll soon discover there are lots of alternatives, all of which make subtly different portraits. To help you compose with the new crop it's useful to switch on the **Rule of Thirds Grid Overlay**. When you've found a crop you like, don't execute it just yet, because by rotating the crop marquee, you can find even more options. If you want your shot to be level you can rotate the shot in Elements by holding the cursor outside the crop marquee and dragging. The lines of the grid overlay will help you true it up. In Photoshop you can draw a rough crop and then click on the **Straighten tool** from the Tool Options bar. Use this to draw a line through the eyes or along a horizon to level up. For more creative crops, you can rotate the shot as much as you like.

AFTER

A tight head and shoulders crop on this portrait really strengthens the composition and eye-contact.



3 Save your pic under a new file name

Once you've found the crop you like, hit **Return** or double-click inside the bounding box to confirm the changes. The crop will be made, discarding the unwanted pixels. Hit **Ctrl+0 (zero)** to take the image to full screen so you have a clear view of your new composition. If you're not certain, you can hit **Ctrl+Z** to undo the crop and have another go, using different crop shapes and aspect ratios. When you're finally happy with the shot, go to **File→Save As** and ensure you save the pic under a new file name so you don't overwrite the original image, After all, you may want to crop it a different way in the future!

Expert tip Set up for consistent crops

It's often handy to crop to a specific size, especially for online use. Click on the Crop tool in Elements and go to the Tool Options bar at the bottom of the screen, click on the Crop Preset Options box and select the size you want if it's listed. If not, type in the desired Width and Height with cm after each. Now type 300 into the Resolution box and set it to Pixels/Inch. Draw your crop over the pic and hit Return to make it this specific size. Save the file as a JPEG with File→Save As with an appropriate title such as *Filename 7x5in300*.

In Photoshop, you can save a Crop Preset to speed up the process. With the Crop tool active, click on the Crop Preset Options box and select Size and Resolution (CS6), or WxHxResolution (CC). Type in the Width, Height and Resolution you want (eg. 7in x 5in at 300ppi) and then select Save as Crop Preset. Give your new preset a name and it will be stored in the drop-down list under the Crop tool's icon.

PEP UP PICS WITH LEVELS

Get to grips with this essential command and enhance contrast and colour with one tool

TECHNIQUE & PICS BY JON ADAMS

At a glance

YOU'LL LEARN How to use the controls in the Levels palette to adjust contrast and colour
YOU'LL NEED Photoshop or Elements
TIME REQUIRED 5 minutes
DIFFICULTY LEVEL Easy

On the disc

VIDEO LESSONS Watch as Jon walks you through this core imaging technique on your computer screen.
START IMAGES The picture Jon used can be found in the Start Images folder. It's called *Desert.jpg*.

THE LEVELS PALETTE IS A HUGELY important tool in imaging. It allows you to both assess the overall exposure of a picture, and make changes that alter contrast and colour. In Photoshop or Elements, open an image and then hit the shortcut **Ctrl+L**. This will open Levels, and you'll see a Histogram of your picture.

This is a graphical view of all the pixels in the image, with black on the left, white on the right, and all other tones distributed in-between. A completely black image would have a single vertical line at the extreme left side, and a pure white pic would have a line on the extreme right. A mid-grey image would have a line running up the middle.

The Histogram doesn't tell us where dark or bright pixels are positioned in your frame – it just tells you that they exist, and how bright or dark they are.

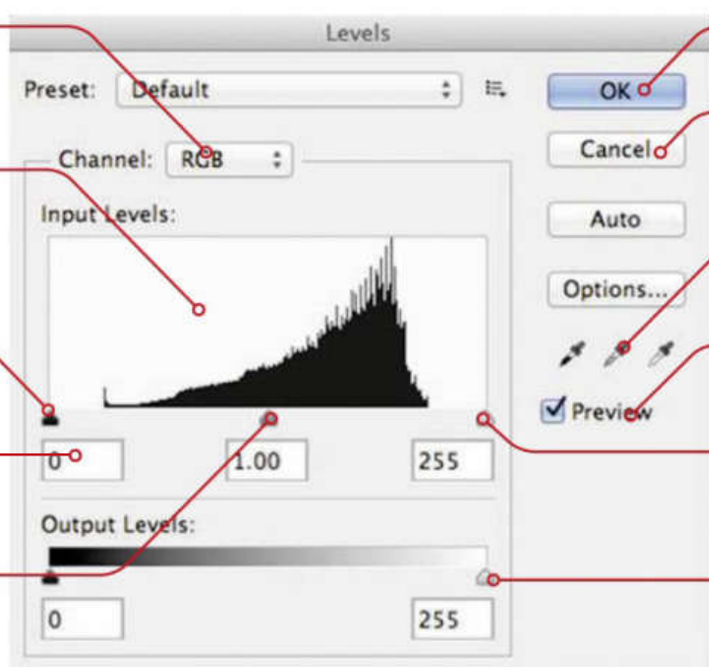
There are three sliders under the Histogram, and these control the Shadows (left), Midtones (centre) and Highlights (right). By moving these, you reset the black, mid and white points in the image, so you can adjust the brightness and contrast to get the look you want. A gap at the left side of the Histogram reveals that there are no true blacks, and a gap at the right means there are no pure whites.

By moving the Shadows and Highlights sliders inwards to meet the graph, the darkest pixels become black and the brightest become white. This boosts contrast, giving the resulting image a full range of tones. With this done, the midtones slider can then be moved left or right to darken or brighten the overall look of the image.

Using these three simple sliders, images can be improved dramatically. But Levels isn't just about improving contrast. Click in the box that says **RGB** and you can make adjustments to the colour balance too. By selecting the **Red**, **Green** or **Blue** Channel, you can use the sliders to alter the way these three primary colours are mixed. To increase the red content, select **Red** and move the midtones slider a little to the left. To reduce it, move it to the right. By adjusting different colour channels, the colour balance of a scene can be altered.

Levels offers a huge range of contrast and colour adjustments in one palette, and 'levelling up' is a core task along the way to image improvement. See below to find out what the controls do, then follow the step-by-step over the page to improve a shot.

Taken in the Mojave desert in the USA in the middle of the day, the bright, overhead sun has washed out contrast and given the image a cool, bluish colour cast. Using just the Levels palette, the contrast can be restored and the colour corrected to give a result more in-keeping with the scene that was experienced.



CHANNEL BOX
By default this is set to RGB, and in this mode, adjustments will affect contrast. Click the arrow to select Red, Green or Blue, and you can adjust colour.

HISTOGRAM
A graphical representation of the pixels in the image, with the darkest tones at the left and the brightest at the right.

SHADOWS SLIDER
Sets the black point of the image. Moving this to the right will make dark tones darker still and increase contrast, and moving it to the left will reduce contrast.

INPUT LEVELS VALUES
0 is pure black, and 255 is pure white. The midtone default is 1.00. By highlighting the boxes, you can key in values directly.

MIDTONES SLIDER
Controls how bright or dark the midtones of the image appear. Moving it left will make the pic appear darker, and moving it right will brighten everything up.

OK BUTTON
Click on this to apply the Levels changes you've made.

CANCEL/RESET
Click to exit the palette without making changes, or hold Alt and click to reset the palette.

EYEDROPPERS
Select the black, mid or white eye dropper, and click directly on the image to set that point to the tone of the eye dropper selected.

PREVIEW
Tick to show adjustments on the image, untick to reveal the image without the Levels changes.

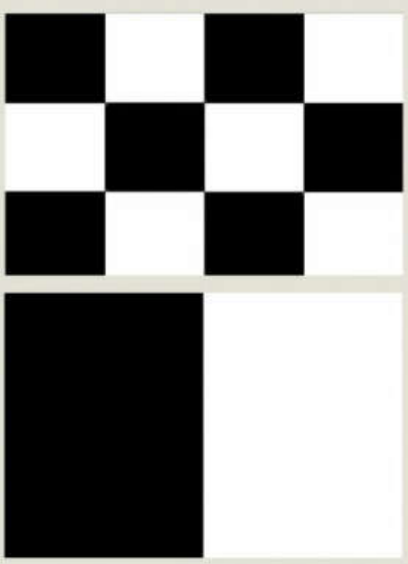
HIGHLIGHTS SLIDER
Sets the white point of the image. Moving this to the left will make the brightest tones brighter still and will increase contrast.

OUTPUT LEVELS
Seldom need to be used, as adjusting these will make blacks brighter and whites darker, reducing contrast in the image.

AFTER

The image has extra punch thanks to a full range of tones and a warmer colour balance provided by Levels.

EXPERT INSIGHT What a Levels Histogram tells you about your picture



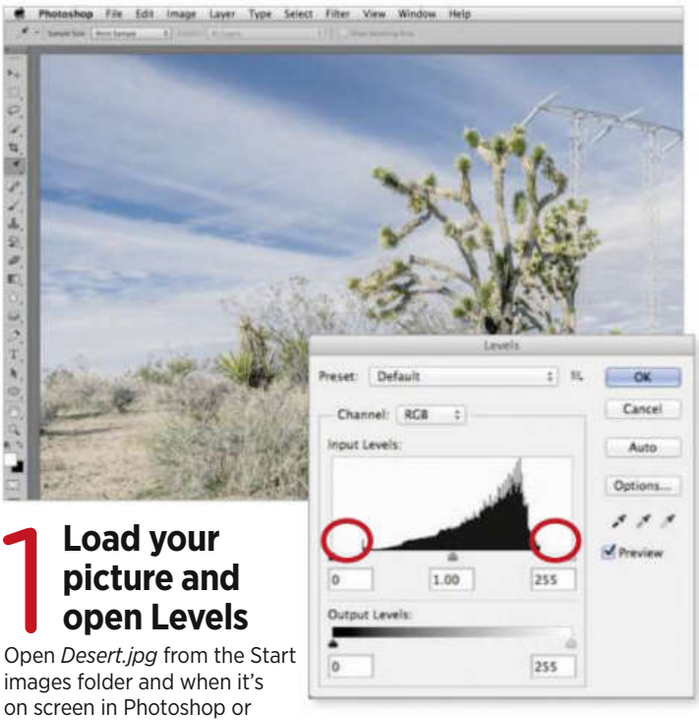
The two images possess the same amount of black and white tones, but these are arranged differently. They share the same Levels palette however, because the Histogram graph only shows the tones present, not how they're composed.

Take a look at the two simple graphics on the left, and you'll see that although they share the same overall amount of 50% black and 50% white, they're very different in the way the black and white zones are arranged.

If you open the Levels palette for either image, you'll see exactly the same result in the Histogram – equally sized lines at the black and white ends of the graph. This is because a Histogram only tells you what tones are actually featured in a picture – it doesn't give you any information on how those tones are arranged.

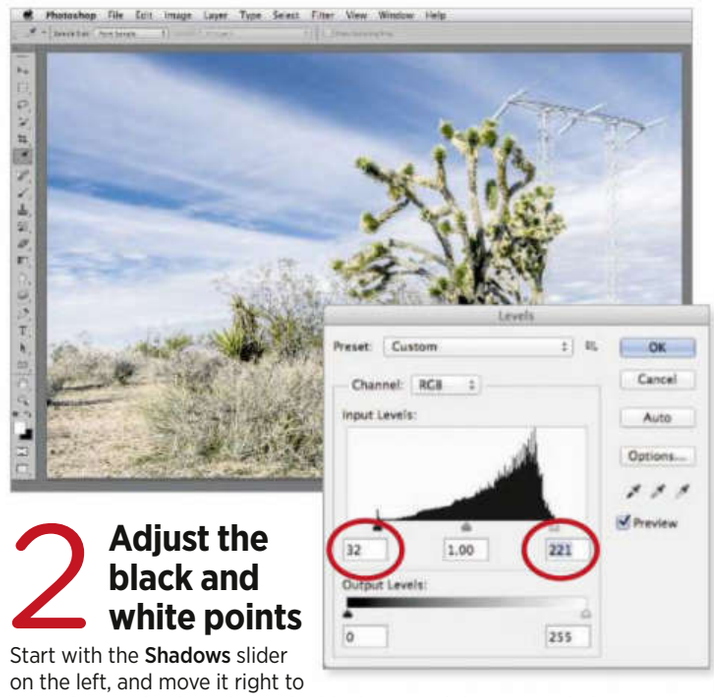
They're still incredibly useful though, as Histograms give an objective reference for the tonal data captured in an image. With a quick glance, you can see whether your shot possesses a full range of tones. If you've captured a bright white subject but your Histogram reveals no pixels on the right hand side of the graph, then you know your image is underexposed, and can take action to address the problem.

STEP-BY-STEP IMPROVE CONTRAST & COLOUR WITH LEVELS



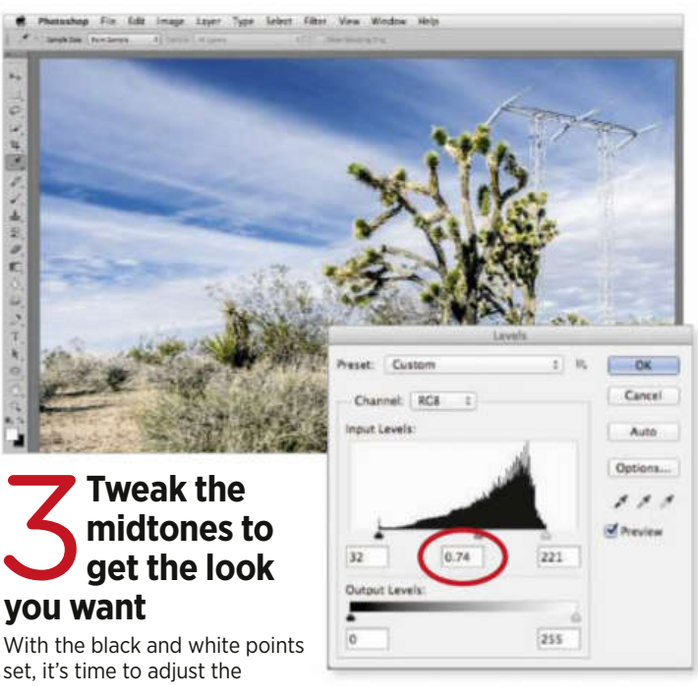
1 Load your picture and open Levels

Open *Desert.jpg* from the Start images folder and when it's on screen in Photoshop or Elements, hit **Ctrl+L** to open the Levels palette. Looking at the Histogram, you'll see that there is a gap at either end of the graph. This indicates that there are no true blacks or whites present, so there's not a full range of tones. That's the reason why the image looks rather washed out and lacking in contrast. By adjusting the three Input Levels sliders under the graph, the picture can be vastly improved.



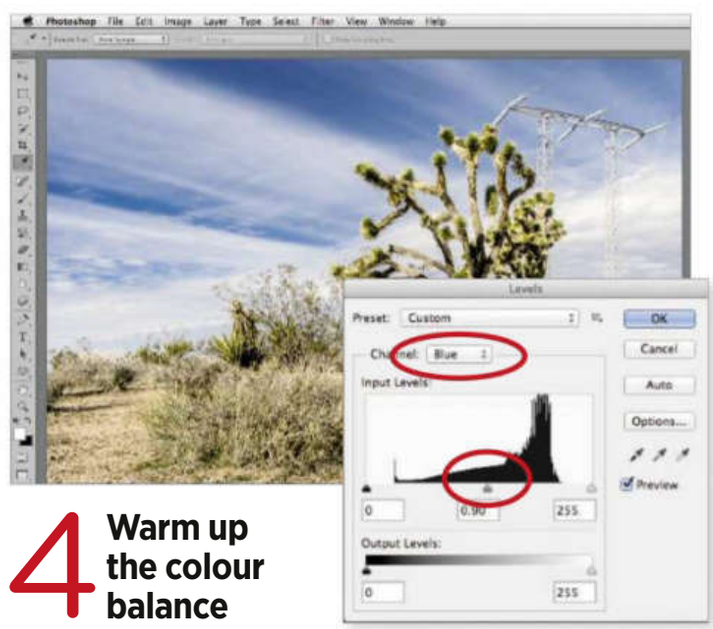
2 Adjust the black and white points

Start with the **Shadows** slider on the left, and move it right to meet the graph. This adjusts the black point of the image, darkening the shadows. On the example image, the slider was moved to a value of **32**. Next move the white slider inwards to meet the brightest tones. This changes the white point of the picture and ensures the brightest part of the image becomes pure white. Take care not to move it too far to the left, or the brightest areas will clip and lose detail. A setting of **221** was used on the example.



3 Tweak the midtones to get the look you want

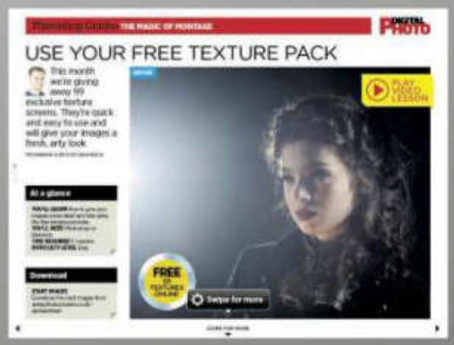
With the black and white points set, it's time to adjust the midtones to get the best looking result. To do this, move the middle slider to and fro to see the effect it has. Where you set your midtones depends on personal preference and the type of look you want for your image. Moodier shots will often be made darker and more dramatic than those with a bright, cheery feel. On the example pic, it was set to **0.74**, but this will vary from image to image.



4 Warm up the colour balance

Switch the **Preview** off and back on and you'll see the picture has experienced a dramatic improvement compared to the starting point. But the colours are still a little cool and uninviting. To warm up the image and make it more appealing, click where it says **RGB** and select the **Red** Channel. Move the middle slider to the left to increase the red content in the scene. Now select the **Blue** Channel and move the middle slider to the right to add some yellow to the mix. Click **OK** and your quick tour of how Levels can transform an image is complete.

GET INTERACTIVE WITH DIGITAL PHOTO ON THE iPAD TODAY



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GET CREATIVE WITH LAYERS & SELECTIONS

Master the most essential skills for more advanced editing, and see how to replace an entire sky

TECHNIQUE & PICS BY GAVIN HOEY

MANY OF THE MOST common adjustments you'll make to a pic will be global, meaning the effect will be applied to the whole photo. While this is often exactly what you want, there will be times when you want to limit the area that's adjusted. And that's where Selections come in. By using these, you can 'ringfence' an area and make your changes while keeping the rest of the photo untouched.

Layers are a step up from Selections, as you effectively stack multiple images on top of each other. Layers can have holes in them to reveal what's on the Layer below and can also be blended together to create new effects.

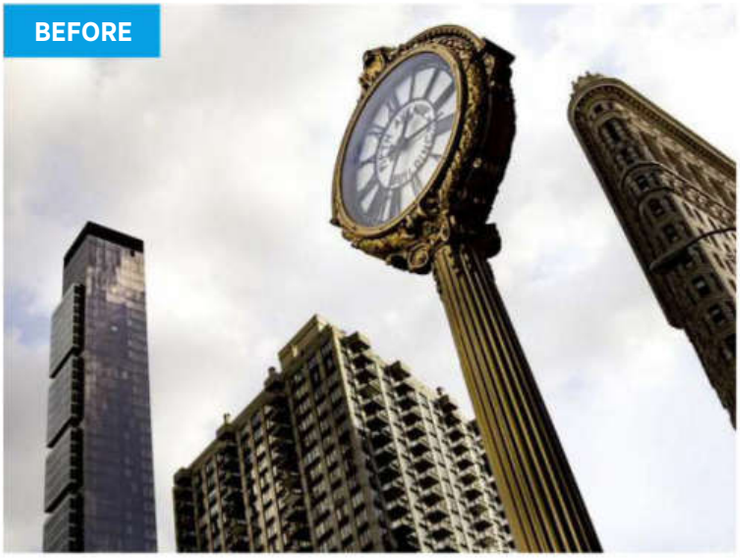
Here you'll see how Selections and Layers can work together to replace a sky with something more exciting.

At a glance

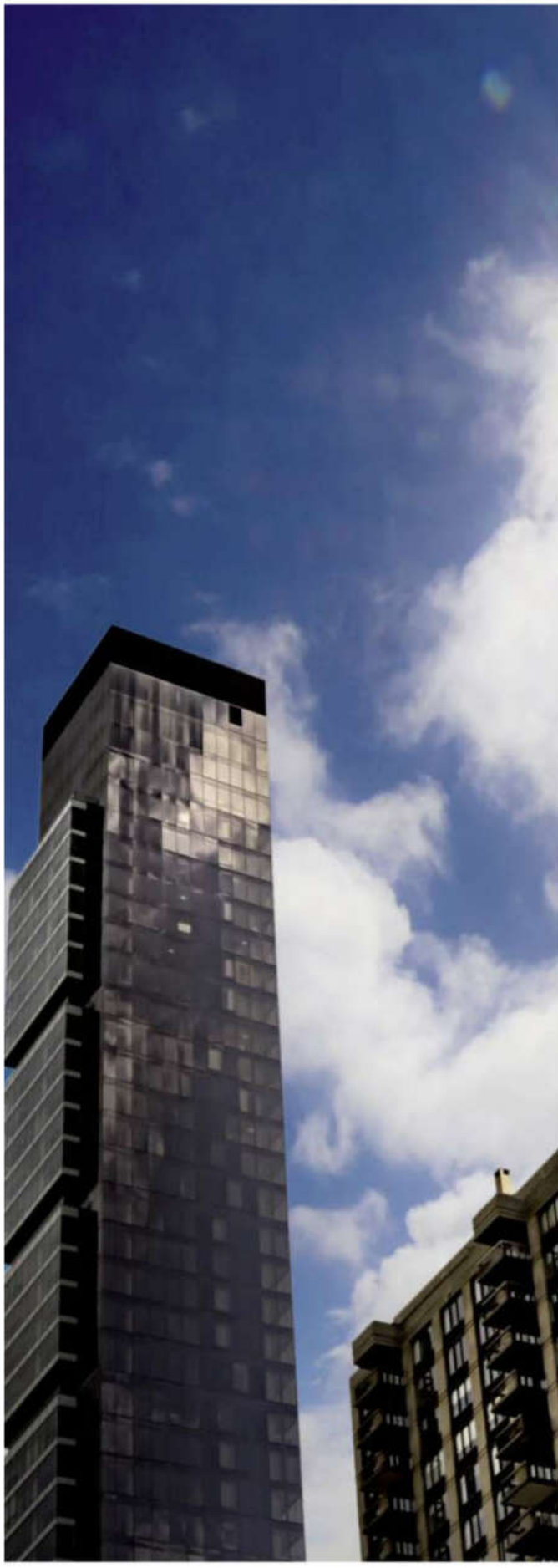
YOU'LL LEARN How to make Selections and use the Layers palette to replace a dull sky with a new one
YOU'LL NEED Photoshop or Elements
TIME REQUIRED 15 minutes
DIFFICULTY LEVEL Easy

On the disc

VIDEO LESSONS Watch as Gavin runs through this entire technique on your computer screen.
START IMAGES The pics Gavin used are in the Start Images folder so you can try the technique. They're called *Sky-NYC* & *Sky-Replacement*.



The main image of the New York skyline is let down by a dull, overexposed sky. It's a common problem which might be possible to fix by selectively darkening the sky. However in this case the poor sky will be replaced with a more dynamic new one.

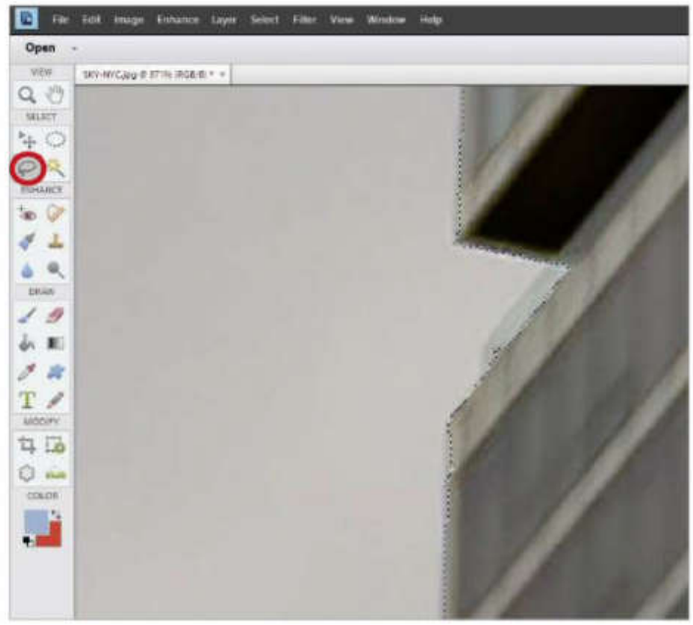


AFTER

The old sky has been removed by making a Selection of it and deleting it, and a much better sky has been added on a new Layer to create a more dramatic image.

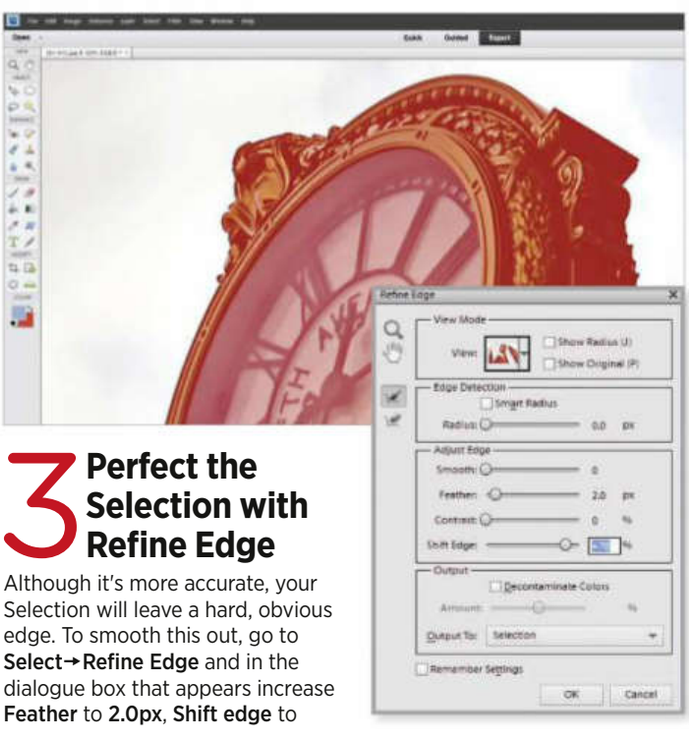
1 Make a basic Selection

Load up a pic with a bad sky into Photoshop or Elements, or use *Sky-NYC.jpg* from the Start Images folder. Both Photoshop and Elements have a range of Selection tools and knowing which one to use is half the battle. In this case you want to remove the sky and because it's an irregular shape but with fairly even colours the **Magic Wand** is the best tool to try first. Click anywhere on the sky to make your initial Selection. You'll see a moving line of 'marching ants'. As the Magic Wand tool only selects pixels that are of a similar colour and adjacent to each other you won't get the whole sky in one click. To add to the Selection hold the **Shift** key and click in an unselected area of the sky. Keep holding Shift and clicking until the whole sky is selected.



2 Add to the Selection

No matter how good the Selection looks from afar it's always best to go in for a close inspection with the **Zoom tool**. Areas that have been missed out can easily be added by holding **Shift** and clicking on them, while any areas that shouldn't be selected can be removed by holding **Alt** and clicking on them. Very small Selections are often best made by switching to the **Lasso tool** and drawing around the area you want to add (hold **Shift**) or remove (hold **Alt**) from the Selection. Don't panic if you accidently select the wrong thing or forget to hold **Shift** or **Alt** and lose the entire Selection – just remember that **Ctrl+Z** will step back to your last click, so all is not lost!

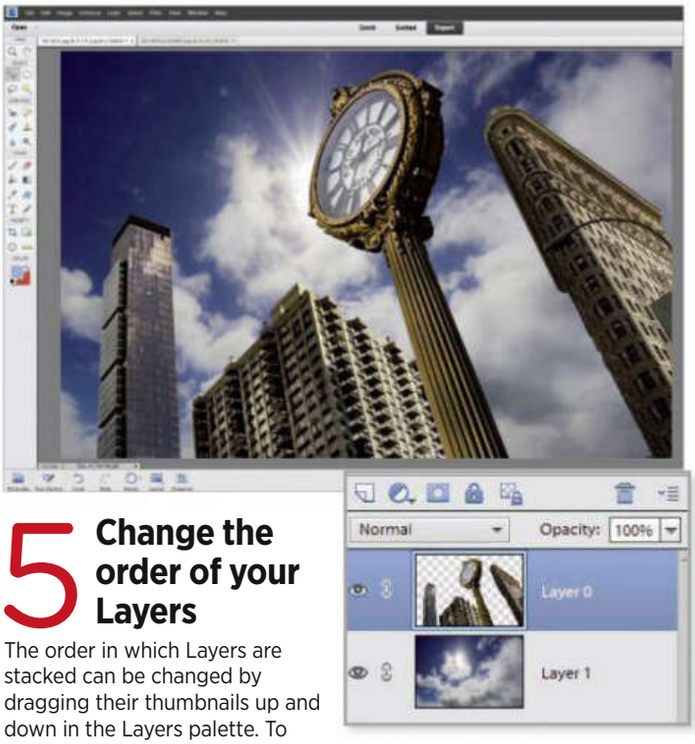


3 Perfect the Selection with Refine Edge

Although it's more accurate, your Selection will leave a hard, obvious edge. To smooth this out, go to **Select→Refine Edge** and in the dialogue box that appears increase **Feather** to **2.0px**, **Shift edge** to **+70%** then click **OK**. At this point you could try darkening the sky with Levels (**Ctrl+L**) but you'll find the blown highlight detail isn't recoverable. To remove the entire sky, go to the Layers palette (**Window →Layers**), find the Layer called **Background**, and drag & drop the padlock icon into the trash bin. The Layer will now be called **Layer 0** and by removing the padlock you've made it into an editable Layer.

4 Add a new sky

Remove the old sky by pressing **Delete**. You'll see a chequerboard pattern, indicating that there are no pixels present. Go to **File→Open** and load *Sky-Replacement.jpg* from the Start Images folder, but before you can add it you need to select it. This time there's no need to use any Selection tools – just click **Select→Select All** (**Ctrl+A**) and you'll see marching ants around the entire pic. Next go to **Edit→Copy** (**Ctrl+C**), then close the new sky (**Ctrl+W**) to return to the main photo. Go to **Edit→Paste** (**Ctrl+V**) and the new sky will appear over the buildings. In the Layers palette you'll a new Layer at the top, hiding the buildings on the Layer below.



5 Change the order of your Layers

The order in which Layers are stacked can be changed by dragging their thumbnails up and down in the Layers palette. To make the new sky appear behind the buildings, all you have to do is drag the sky Layer (**Layer 1**) under the other Layer (**Layer 0**) and drop it in place. Even though you can see the two Layers at the same time they're still two separate images, and in this case, the photo of the sky is bigger than the one of the buildings. Select the **Move tool** (**V**) and you can drag the sky around without moving the buildings. Position it carefully so the flare of light appears right next to the edge of the clock. You can fine-tune the position with the cursor keys.

6 Add extra Layers to improve the pic

Layers have almost endless uses and there's no limit to how many you can have, so why stop at two when you could have three? Go to **Layer→Duplicate Layer**, type a name, such as *City Clock* and click **OK**. In the Layers palette you'll see there is now a new Layer that's exactly the same as the buildings Layer. This is handy for trying things that might be hard to undo in the future but you can also use the duplicate Layer to adjust the look of the photo. In this example, click where it says **Normal** in the Layers palette and choose **Multiply** from the list. The buildings will become darker. If you had chosen **Screen** they'd become go lighter, while **Overlay** would add more contrast. Experimentation is the key here, to find a style that suits your image.

7 Create an Adjustment Layer to finish

The **Multiply** Blending mode combines the Layer with the one below to make a darker effect. It also makes colours more intense so press **Ctrl+Shift+U** to remove the colour. As before, the result will only happen on the active Layer. If the effect is too strong, reduce the Layer **Opacity** to **50%**. If you want to adjust all the Layers in one go, for example if you want to brighten or darken the whole image, Layers has this covered, too. Go to **Layer→New Adjustment Layer→Levels**, click **OK** and move the sliders in **Levels** to make your changes. In the Layers palette you'll see the Levels Adjustment Layer you've created. You can double-click the thumbnail to open Levels and adjust the settings whenever you like.

Bonus video Learn more on our website

Selections and Layers are both vast subjects and if you've followed along here you'll have already grasped many of the essential skills you'll need to progress. In *Technique of the Month Extra* you can take another step along the learning path by getting more creative with Layers and Selections to make a long exposure effect and discover a brilliant mono style using a Gradient Map Adjustment Layer.

You can catch the bonus video, which is completely free to watch on our website. All you have to do is sign up to our Technique of the Month Extra mailing list at *www.photoanswers.co.uk/extra*.

Register now, and you'll get a fantastic extra video to boost your skills every single month, so you'll never be short of new digital techniques to try.

See how to create a black & white long exposure effect using Layers by watching our bonus video at *www.photoanswers.co.uk/extra*

REMOVE BLEMISHES FOR CLEANER SHOTS

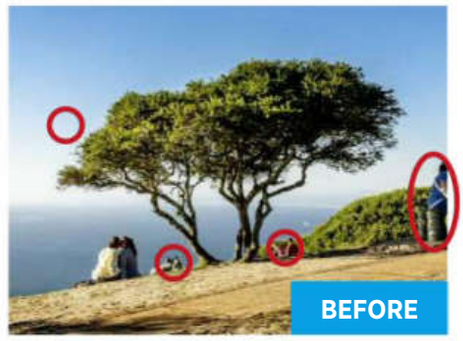
Lose unsightly distractions with healing & cloning to declutter composition and improve picture quality

TECHNIQUE & PICS BY JON ADAMS

IT'S NOT ALWAYS POSSIBLE TO GET A PERFECT picture. From litter and power lines in a rural landscape to debris cluttering a famous landmark, there's often a few annoying elements spoiling your picture and creating a distraction for your viewer's eye.

Then there are problems like sensor dirt – specks of dust that cling to your camera's chip and reveal themselves in less-detailed areas like skies. All these things degrade a picture and, unlike a piece of litter, these aren't items you can easily remove from your shot at the time of capture.

Knowing how to clean up a picture digitally and get rid of distractions in software is a vital skill for photographers. It works on everything from pimples on a subject's face to unwanted tourists in a scene, and it's far easier than you'd think. You can use automatic or manual tools to make it happen, and this tutorial reveals how it's done.



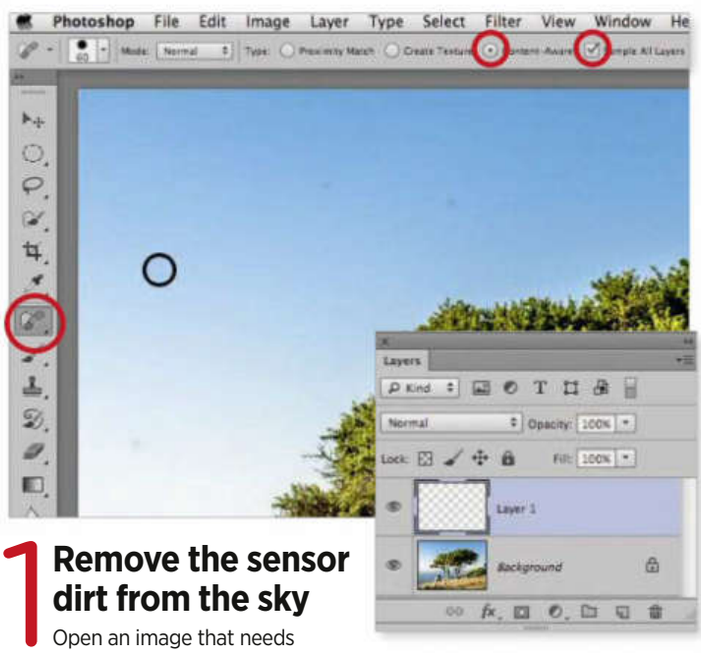
The aim of this shot was to capture a sense of solitude with only the courting couple under the tree. To bring this about, a number of distractions have to be removed, from to the unwanted people in the frame to unsightly dust specks in the sky.

At a glance

YOU'LL LEARN How to remove unsightly distractions from pics
YOU'LL NEED Photoshop or Elements
TIME REQUIRED 5 minutes
DIFFICULTY LEVEL Easy

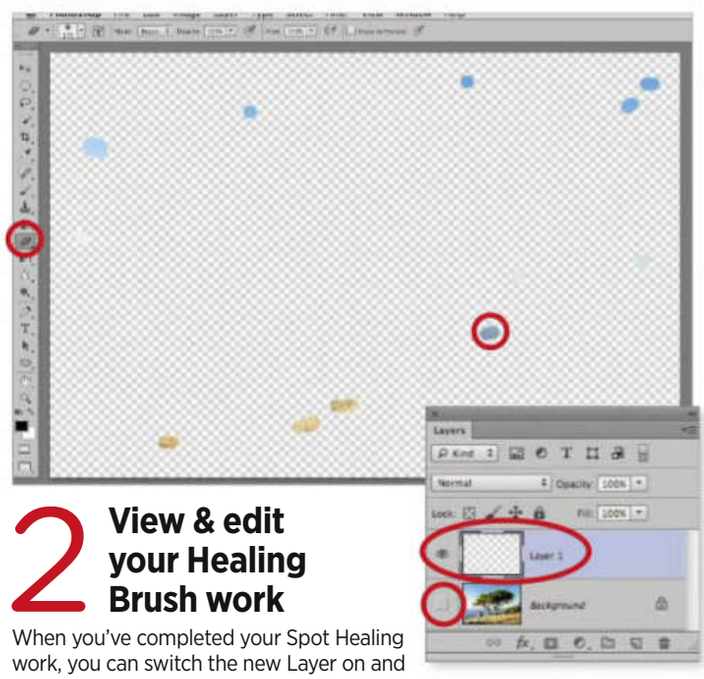
On the disc

VIDEO LESSONS Watch as Jon runs through this entire technique on your computer screen.
START IMAGE The picture Jon used for this project can be found in the Start Images folder. It's called *The Lovers.jpg*



1 Remove the sensor dirt from the sky

Open an image that needs cleaning up, or use the file *The Lovers.jpg* from the Start Images folder. Zoom in on the sky and you'll see some sensor dirt that's spoiling the image. Open the Layers palette (**Window→Layers**) and then hit **Ctrl+Shift+N** followed by **Return** to create a new blank Layer. Now select the **Spot Healing Brush tool** from the Toolbox, and in the Tool Options bar, select **Content Aware** and **Sample All Layers**. Hover the cursor over a blemish in the sky and adjust brush size using the square brackets keys so your brush is bigger than the distraction. Click once to remove it, then scroll around the image, removing any other problems you find. If you make a mistake, hit **Ctrl+Z** to undo the last attempt, and have another go.

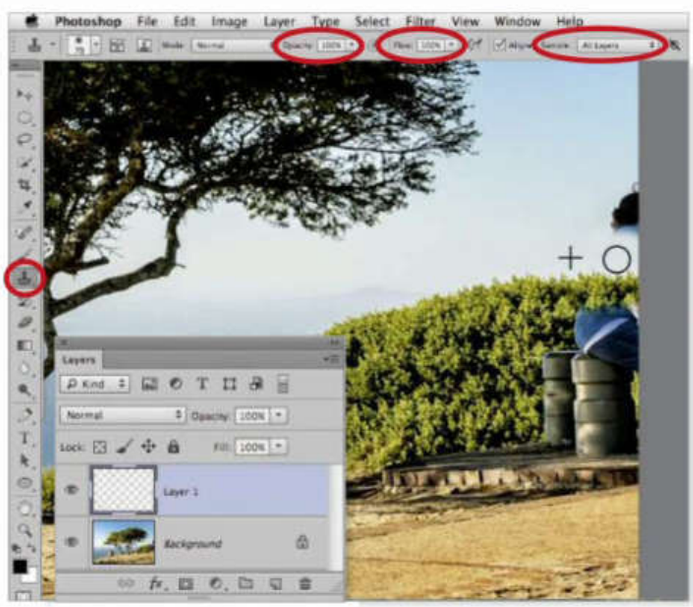


2 View & edit your Healing Brush work

When you've completed your Spot Healing work, you can switch the new Layer on and off to see the difference you've made. To do this, click the eye icon, and you'll see your original and healed image. By having the healing work on a separate Layer, it's easy to keep track of the changes you've made. If you want to see the healing work in isolation, turn off the **Background** Layer in the same way. This will reveal a mainly blank image with strange splodges showing where you've applied the Healing Brush. The advantage of keeping this on a separate Layer is you can edit your healing with ease. If you've inadvertently healed a part of the image you'd actually like to keep, you can simply select the **Eraser tool** and rub out the relevant splodge.

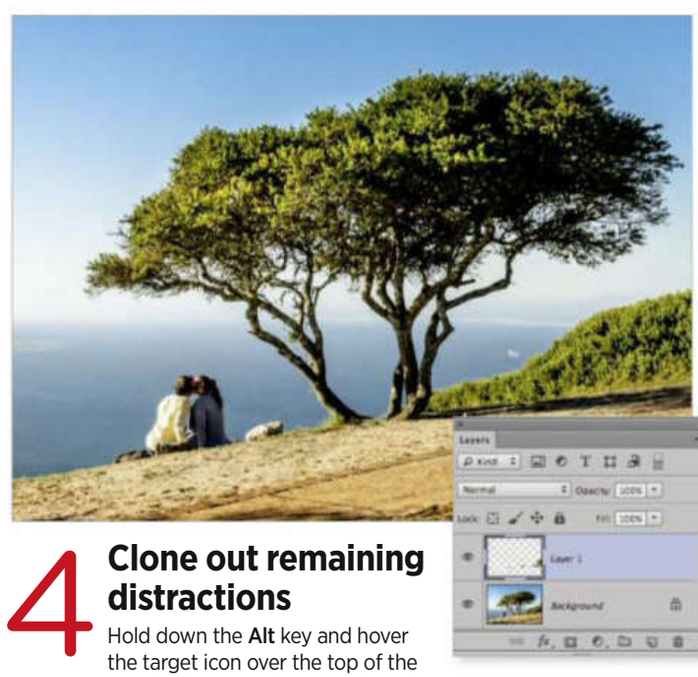
AFTER

With the clutter removed, the shot is able to tell its simple story without any distractions.



3 Set up the Clone Stamp tool

While the Spot Healing Brush is great for cleaning up isolated problems, it's not suitable for more complex repairs. Here, the **Clone Stamp tool** is often the best solution, as it allows you to select and apply the actual pixels you want to make the repair with. To remove the figure on the right of the frame, select the **Clone Stamp tool** and use the square brackets keys to set a medium sized brush. In the Tool Options bar, make sure that **Sample All Layers** is selected, and set the **Opacity** (and the **Flow** in Photoshop) to **100%**. You can use the same Layer as for your healing work, so make sure this is active in the Layers palette.



4 Clone out remaining distractions

Hold down the **Alt** key and hover the target icon over the top of the hedge next to the figure on the right of the frame. Click here and you'll sample this area. Now release **Alt** and paint over the figure so the top of the hedge lines up and continues seamlessly. Keep changing your sample point by **Alt+clicking** and you can remove the figure and the seats using similar areas nearby. Once you've completed this part, do the same with the figures toward the centre of the frame, and then carefully remove the bag next to the rock. You'll need to use a smaller brush for this. When the cloning is complete, you'll have removed all the distractions spoiling the shot and will only have the romantic couple remaining in the scene.

TRUE UP SHOTS FOR BETTER COMPOSITION

Use the Transform command in Photoshop or Elements to straighten your pictures and improve your framing

TECHNIQUE & PICS BY ANDY HEATHER

UNLESS YOU'RE ABSOLUTELY SQUARE-ON to a subject, a wide-angle lens will result in slanting lines. Tilt the camera up and the verticals will converge towards the top, and pan to the left or right to watch the horizontals slope off one way or the other. Aside from using very expensive tilt-shift lenses, there's no way to correct these problems in-camera. However, the Transform command, which is available in both Photoshop and Elements, provides a quick and easy fix.

Whether you've taken a shot of a building, a framed painting or a woodland landscape, the Transform command can be used to pull distorted lines back into shape, giving a natural-looking picture free from distractions. Although Transform has a number of modes that allow you to scale, distort, skew, rotate or change perspective, all these can be accessed quickly using the Free Transform command in conjunction with the Ctrl, Alt and Shift keys. In this tutorial, we'll walk you through these and put them to use.

This shot was supposed to be a memento of the trip, but it isn't level and the verticals are converging. The problems are distracting from the subject of the shot. This occurs when you're shooting upward handheld, but it's easy to correct using Photoshop's Transform command.

At a glance

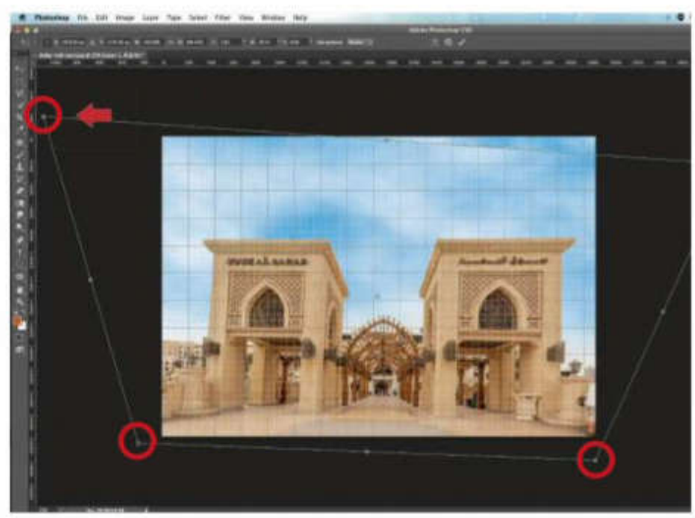
YOU'LL LEARN How to recompose skewed pictures with Transform
YOU'LL NEED Photoshop or Elements
TIME REQUIRED 5 minutes
DIFFICULTY LEVEL Easy

On the disc

VIDEO LESSONS Watch as Andy runs through this entire technique on your computer screen.
START IMAGE The picture Andy used for this project can be found in the Start Images folder. It's called *Dubai Mall.jpg*

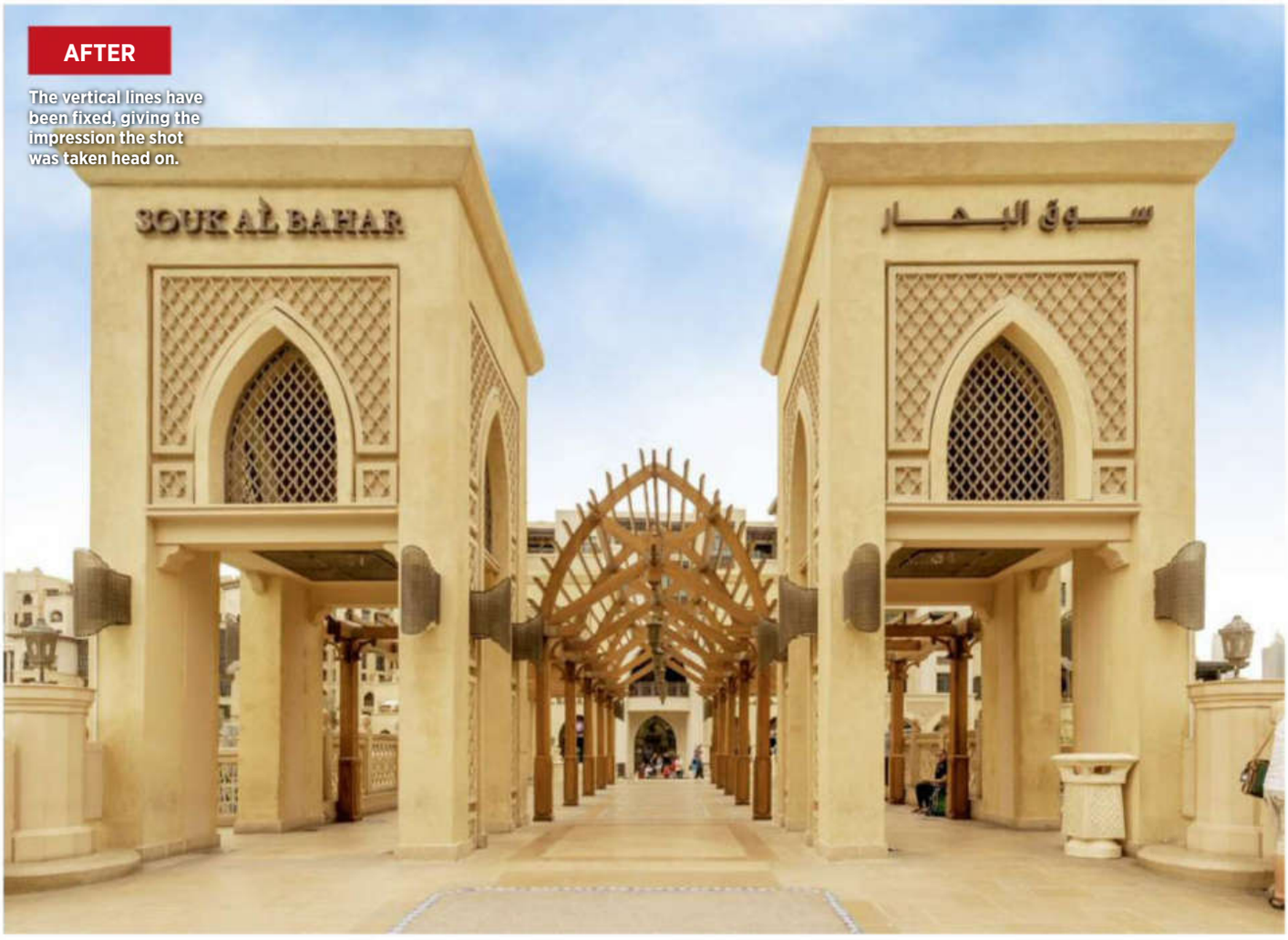
1 Open a file and duplicate the Background Layer

Open a shot with distorted lines, or load *Dubai Mall.jpg* from the Start Images folder. Make sure your Layers palette is visible by going to **Window→Layers**. You'll see a Layer named *Background*. It's best not to make any changes to the **Background** Layer so you can always return to your original image if needed. For that reason, it's a good idea to work on a duplicate of the **Background** Layer, so hit **Ctrl+J** to make a copy. Now press **Ctrl+T** in either Photoshop or Elements to enter the **Free Transform** mode. You'll see a bounding box appear around your image with eight control handles. You're now ready to start fixing the shot.



2 Use Distort to straighten verticals

Create some room around your canvas by hitting **Ctrl+Minus** a few times. Now hold down the **Ctrl** button and drag the bottom-right and top-right handles until the right hand side of the building is vertical. Use the edge of the frame or bring up the on-screen grid overlay by pressing **Ctrl+'** to give you a reference for this. Do the same with the left handles. Be aware that when you pull the handles on the left side, you may accidentally skew the vertical lines on the right, so continue to make adjustments to all four corner handles until the vertical and horizontal lines of the building line up with the grid. When you've finished, hit **Ctrl+'** again to hide the grid overlay. The lines are now true, but the building looks a little squat as a result of the distortions.



AFTER

The vertical lines have been fixed, giving the impression the shot was taken head on.

3 Use Free Transform to elongate the building

With Free Transform still active, click on the handle in the middle of the top edge of the shot and drag it upward. As the shot elongates, take care not to stretch it too far and make the subject look unnatural. Try to use written signs, people or other details within the frame to judge when the subject looks as it should. So far, all the changes you've made have been to a preview image at low resolution. When you're happy with the recomposed shot, double-click inside the bounding box or hit **Return** to confirm the changes and create a high resolution image. To save it, go to **File→Save As** and save your image under a new name. This avoids overwriting the original file, in case you want to use it in the future.

The Transform Submenu

Scale
Enlarges or shrinks an item horizontally, vertically, or both. To scale in proportion in Photoshop, hold **Shift** while dragging a corner handle. In Elements, tick the **Constrain Proportions** box in the Tool Options bar.

Rotate
Turns an item around a reference point. In Elements, this point is at the centre, but in Photoshop you can move it to another position, and rotate around that. Hold **Shift** to keep the rotation to 15° steps.

Skew
Slants an item. Press **Ctrl+Alt** to use this directly from **Free Transform** mode.

Distort
Stretches an item in any direction. Hold down **Ctrl** and pull a corner handle to use this directly in **Free Transform** mode.

Perspective
Distorts both sides of a pic at once. Press **Ctrl+Alt+Shift** to use this in **Free Transform**.

Warp (Photoshop Only)
Manipulates the shape of an item by bending the pixels in arcs. Press the **Warp Mode** button in the Tool Options bar to use this directly from within **Free Transform** mode.

CONVERT RAWS FOR PERFECT SUNSETS

Control contrast and colour in Photoshop to get the best quality from shots taken at sundown

TECHNIQUE & PICS BY JON ADAMS

NOBODY CAN RESIST the allure of sunset shots, but your camera can't capture the scene your eyes experience. The problem is, if you keep the sun in shot, the contrast range will be too great for your camera to handle. If you expose to record the sun and sky detail, your foreground will be rendered in silhouette, and if you do the opposite and set up your camera to get detail in the foreground, your sky will be overexposed.

The advantage of shooting in RAW format is you'll record far more information across the tonal range, and if you expose for the sun and sky, there'll be enough detail in the dark areas to bring back. Knowing how to bring it back is the important bit, and that's exactly what's covered in this essential RAW technique for Photoshop...

By exposing for the highlight detail in the sky, the land has been thrown into darkness. But the extra information in a RAW file can be extracted to provide a balanced exposure.

At a glance

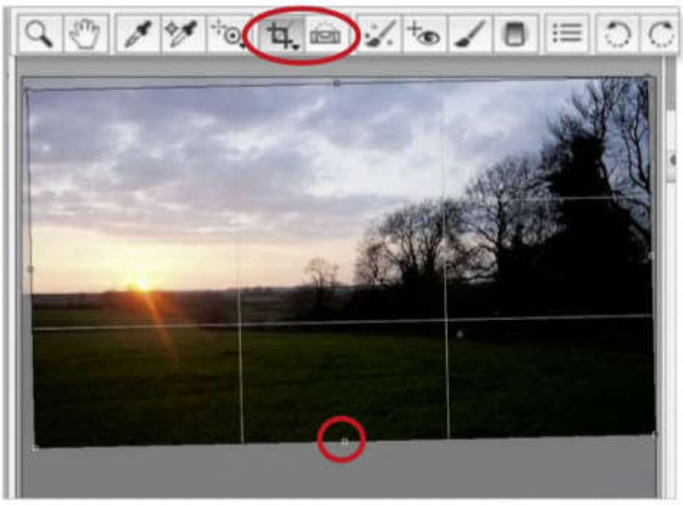
YOU'LL LEARN How to extract the detail and colour from a RAW file to recreate the scene you saw
YOU'LL NEED Photoshop CS6 or CC
TIME REQUIRED 10 minutes
DIFFICULTY LEVEL Medium

On the disc

VIDEO LESSONS Watch as Jon runs through this entire RAW processing technique on your computer screen
START IMAGES The RAW file Jon used is in the Start Images folder so you can try the technique for yourself. It's called *Field.dng*

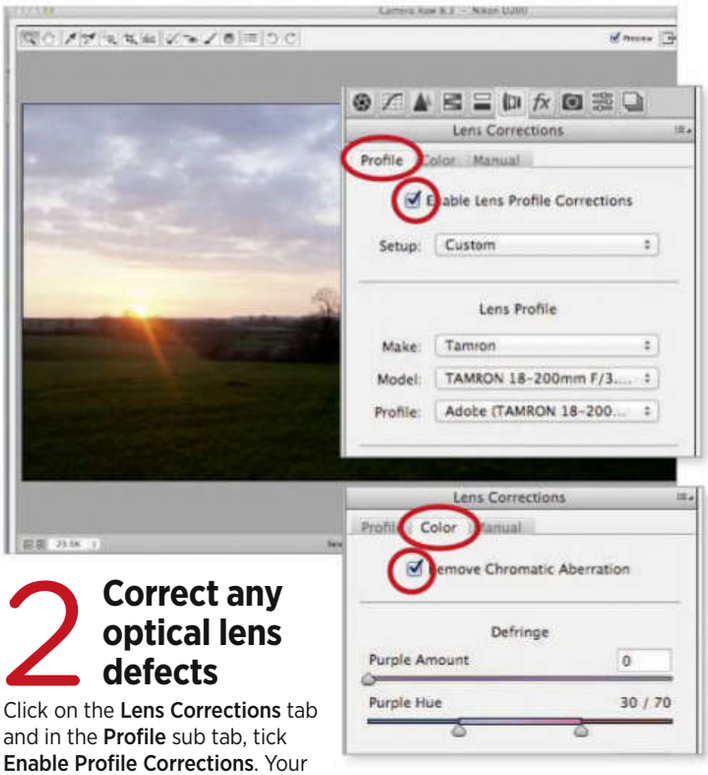
AFTER

With careful RAW processing, the detail can be revealed in the foreground, and warmth can be added to the sky.



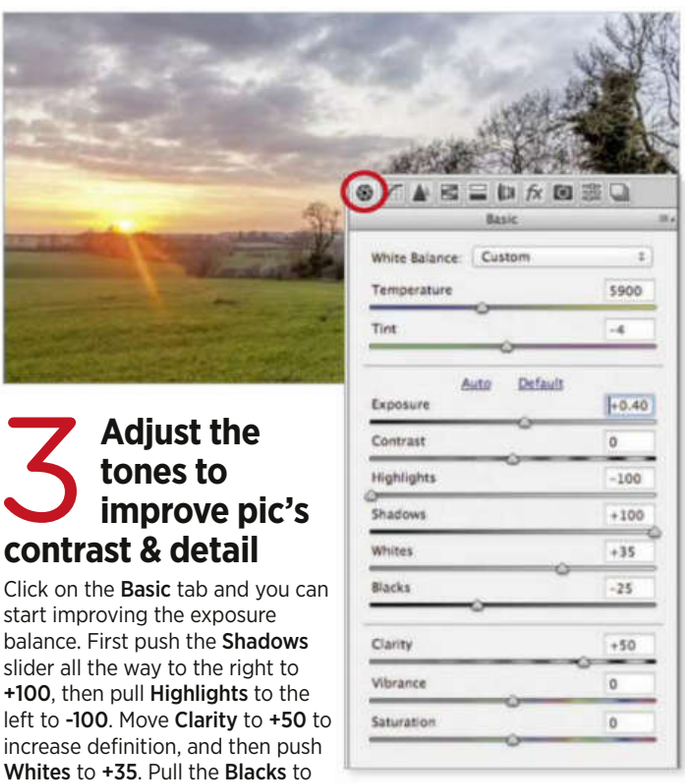
1 Straighten and crop the image

Open the RAW file *Field.dng* into Photoshop CS6/CC and the Adobe Camera Raw Interface will launch. Select the **Straighten tool** from the Toolbar (it looks like a spirit level), and click on the left of the horizon in the image. Still holding the mouse button, drag it along the horizon, releasing the mouse when you get to the other side. Double-click inside the bounding box and the crop interface will appear on screen. Now click and hold on the **Crop tool** icon to see the drop-down options and select **Normal** from the list. Pull the bottom 'handle' of the crop marquee upwards to lose some of the dead foreground, then pull the right-hand side inwards to improve the composition. Double-click inside the bounding box to see the cropped image. No RAW file is actually cropped or altered in any way, so if you want to get rid of a crop you've made at any stage, just select the **Crop tool** from the Toolbar and hit the **Esc** key to return to the original file.



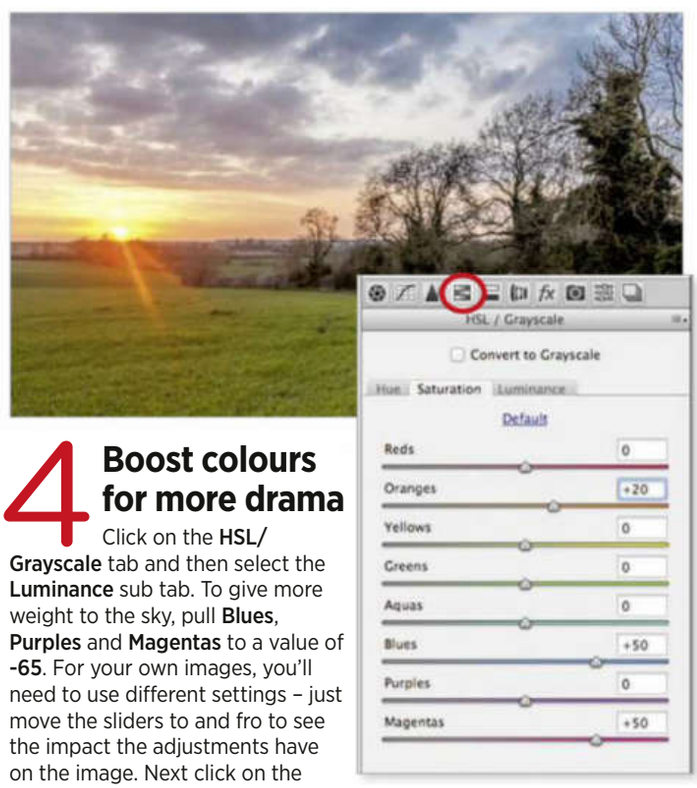
2 Correct any optical lens defects

Click on the **Lens Corrections** tab and in the **Profile** sub tab, tick **Enable Profile Corrections**. Your lens will usually be automatically selected, but if not, select it's make from the drop-down list under **Make**. For the example image, check that **Tamron 16-300mm** is selected. If your version of Camera Raw is older than this lens, choose **Tamron** from the **Make** box and use the **18-200mm** option, as the profile is very similar. Now click on the **Color** sub tab, and tick **Remove Chromatic Aberrations**.



3 Adjust the tones to improve pic's contrast & detail

Click on the **Basic** tab and you can start improving the exposure balance. First push the **Shadows** slider all the way to the right to **+100**, then pull **Highlights** to the left to **-100**. Move **Clarity** to **+50** to increase definition, and then push **Whites** to **+35**. Pull the **Blacks** to around **-25** to ensure the darkest tones are present. With both these sliders, hold down the **Alt** key while moving them to see where the tones are clipping and losing detail. At the top, move **Temperature** to **5900**, and finally set the **Exposure** to **+0.40** to brighten the scene.



4 Boost colours for more drama

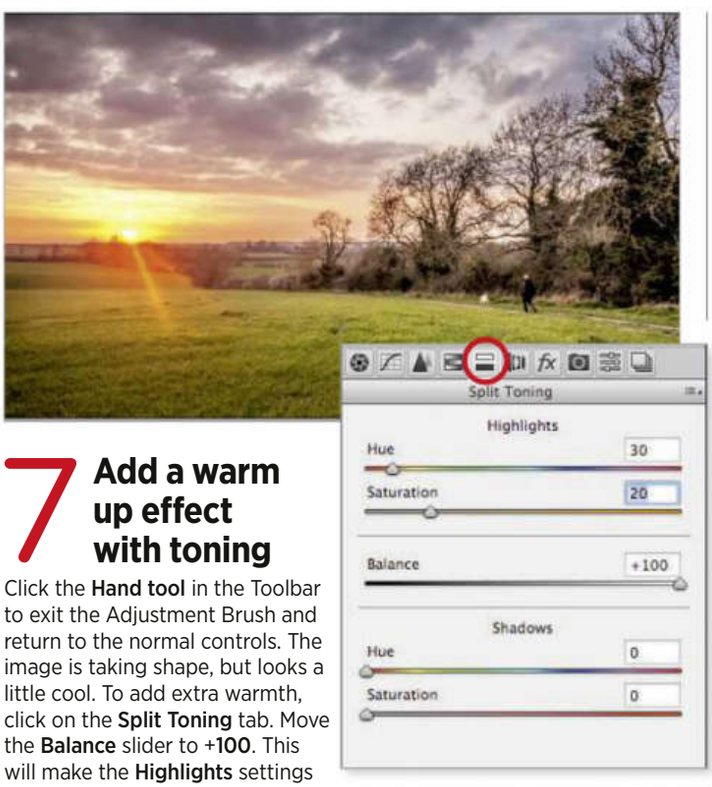
Click on the **HSL/ Grayscale** tab and then select the **Luminance** sub tab. To give more weight to the sky, pull **Blues**, **Purples** and **Magentas** to a value of **-65**. For your own images, you'll need to use different settings – just move the sliders to and fro to see the impact the adjustments have on the image. Next click on the **Saturation** sub tab, and do the same to see how you can get more intensity in different colours. For the example image, **Oranges** was boosted to **+20** to make more of the vibrant colours in the setting sun. **Blues** was then set to **+50** and **Magentas** to **+50** to improve the sky.

5 Darken the frame edges with grads

Select the **Graduated Filter tool** from the Toolbar above the image, and move the **Exposure** slider to **-0.50** and the **Clarity** slider to **+50**. Now click on the top of the image and drag downwards to create a grad effect. Hold **Shift** while doing this to keep the line straight. Now pull in a grad from the left side of the image to add a subtle darkening. Do the same from the bottom and from the right side. The four grads you've added will have leave pins on the screen – click on any of them will allow you to edit the grad. Toggle the **Show Overlay** box, and you can see the effect on a clear screen without the pins.

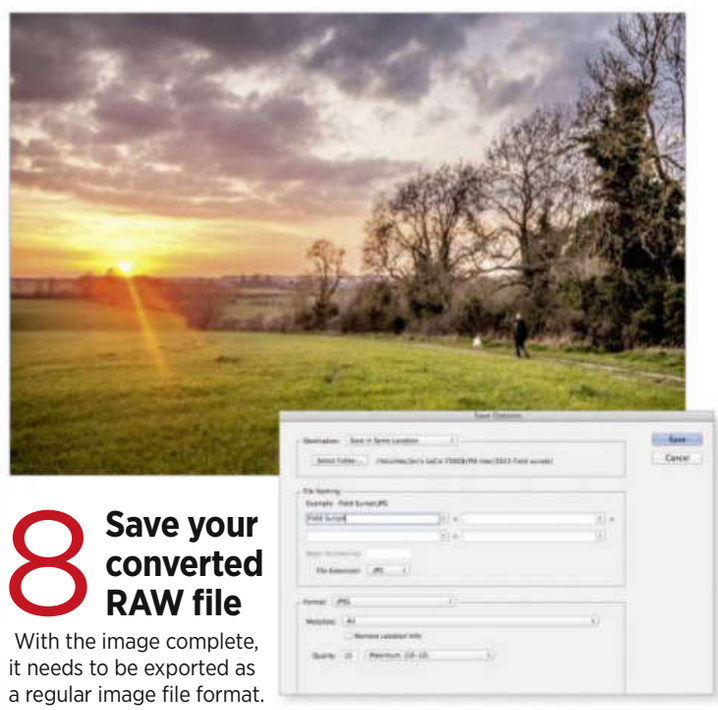
6 Brighten details selectively

Select the **Adjustment Brush**, and set the **Exposure** slider to **+0.50** and the **Clarity** to **+50**. At the bottom of the control panel, set **size** to **10**, **Feather** to **100**, **Flow** to **50** and **Density** to **100**. Paint over the dog walker, track and trees on the right of the image to brighten them a little. To tidy the edges of your adjustment, click on **Erase**, then use the brush to refine the effect and give a subtle blend. If you overdo the erasing, click on **Add** and reapply the effect.



7 Add a warm up effect with toning

Click the **Hand tool** in the Toolbar to exit the Adjustment Brush and return to the normal controls. The image is taking shape, but looks a little cool. To add extra warmth, click on the **Split Toning** tab. Move the **Balance** slider to **+100**. This will make the **Highlights** settings affect the entire image. Move **Hue** to about **+30** to get an amber colour, then increase **Saturation**, bit by bit until you see the warmth flood into the image. The setting will vary depending on the source picture, but a value of **+20** works well for the example image.



8 Save your converted RAW file

With the image complete, it needs to be exported as a regular image file format. You can do this by clicking on **Open Image** to load it into the regular Photoshop interface, and then going to **File Save As**, but it's also possible to save directly from the ACR interface. To do this. Click on **Save Image** at the bottom left, and set the **Format** to **JPEG**. Use a **Quality** setting of **10-12**, and at the top, you can set the destination (leave this as **Same Location** if you want the JPEG saved with your RAW file). Give the file a new Name, then click **Save**.

SHARPEN SHOTS TO ENHANCE DETAIL

Use Layers and the Unsharp Mask filter in Photoshop or Elements to quickly give your images a boost

TECHNIQUE & PICS BY BEN DAVIS

EVERY IMAGE YOU TAKE WILL benefit from selective sharpening. This is because many cameras have a Low Pass or Anti-Aliasing filter over the sensor, and this slightly blurs images in an attempt to counter the effects of moiré. While it's important to remedy this, sharpening your pics will also enhance detail in any shot, creating much more impact.

Sharpening won't fix focus errors or camera shake, as it works by increasing the contrast on the edges of detail. If the detail is too blurred, Photoshop won't be able to detect the edges to apply the extra contrast. For this same reason, it's best not to apply sharpening to areas lacking detail. If you sharpen naturally 'soft' areas, you'll introduce artifacts and reduce image quality. Applying sharpening should be the last thing you do when enhancing an image, because you don't want to further process areas that have had it applied.

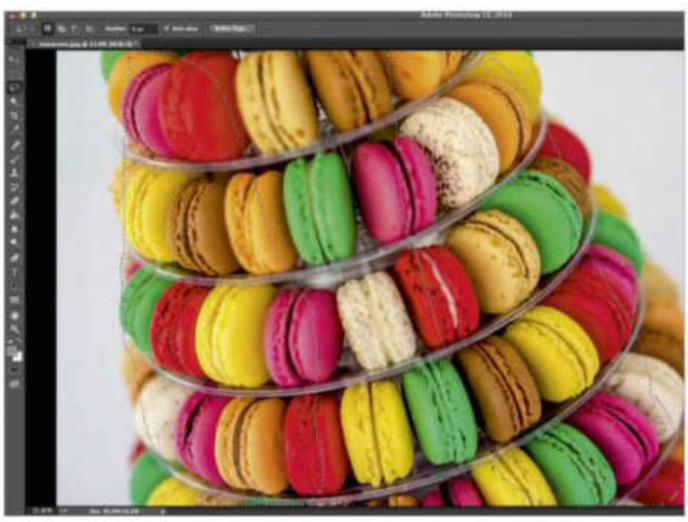
This colourful shot of a tier of macaroons can be given even more impact by using the Unsharp Mask filter to make the sharp areas appear even sharper and more detailed. We'll show you the best way to do it in Photoshop, so your pics stand out.

At a glance

YOU'LL LEARN How to sharpen your images to enhance detail
YOU'LL NEED Photoshop or Elements
TIME REQUIRED 5 minutes
DIFFICULTY LEVEL Easy

On the disc

VIDEO LESSONS Watch as Ben runs through this entire technique on your computer screen.
START IMAGE The picture Ben used for this project can be found in the Start Images folder. It's called *Macaroon.jpg*



1 Select the areas of your image for applying the Sharpening effect

Once you've finished making all your other adjustments to an image, and you're ready to save the final shot, it's time to apply some sharpening. To prevent introducing distracting artifacts to the shot which reduce image quality it's best to select the specific areas you wish to sharpen. This should be the parts of the frame to which the viewer's eyes are naturally drawn, and not areas that are out of focus or contain little detail. After opening an image or using *Macaroon.jpg* from the Start Images folder, select the **Lasso tool** from the Toolbox (press **L** for a shortcut) and draw around the area you want to sharpen. You'll see 'marching ants' around this Selection. If there are multiple areas you want to select, hold down **Shift** and draw with the **Lasso** again, to add to the selected area.

2 Feather your Selection and create a new Layer

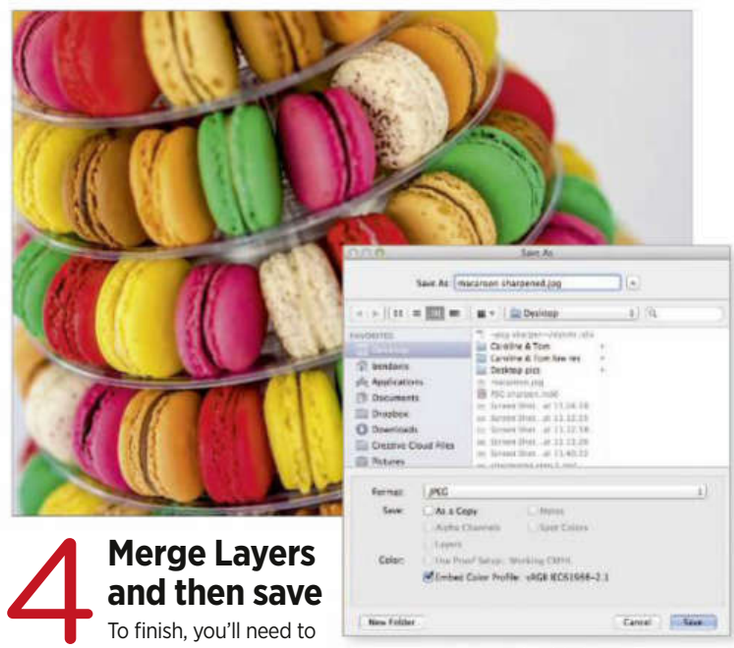
With your Selection made, it's best to soften the edges so that any adjustments blend in more smoothly with the rest of the image. To do this, click the **Refine Edge** button in the Tool Options bar, and then adjust the **Feather** slider until the edge blends in smoothly. Click **OK** to confirm. In Elements, you'll find **Refine Edge** at the bottom of the interface, whereas in Photoshop it's at the top. For the example Image, the **Feather** slider was set to **41.5px**. With your Selection's edge feathered, punch it into a new Layer by pressing **Ctrl+J** on the keyboard. This will place just the selected area on a new **Layer 1**. It's important to do this so the sharpening effect is only applied here, and not to the entire image.

AFTER

With the most in-focus areas sharpened, the subject 'pops', giving greater impact.

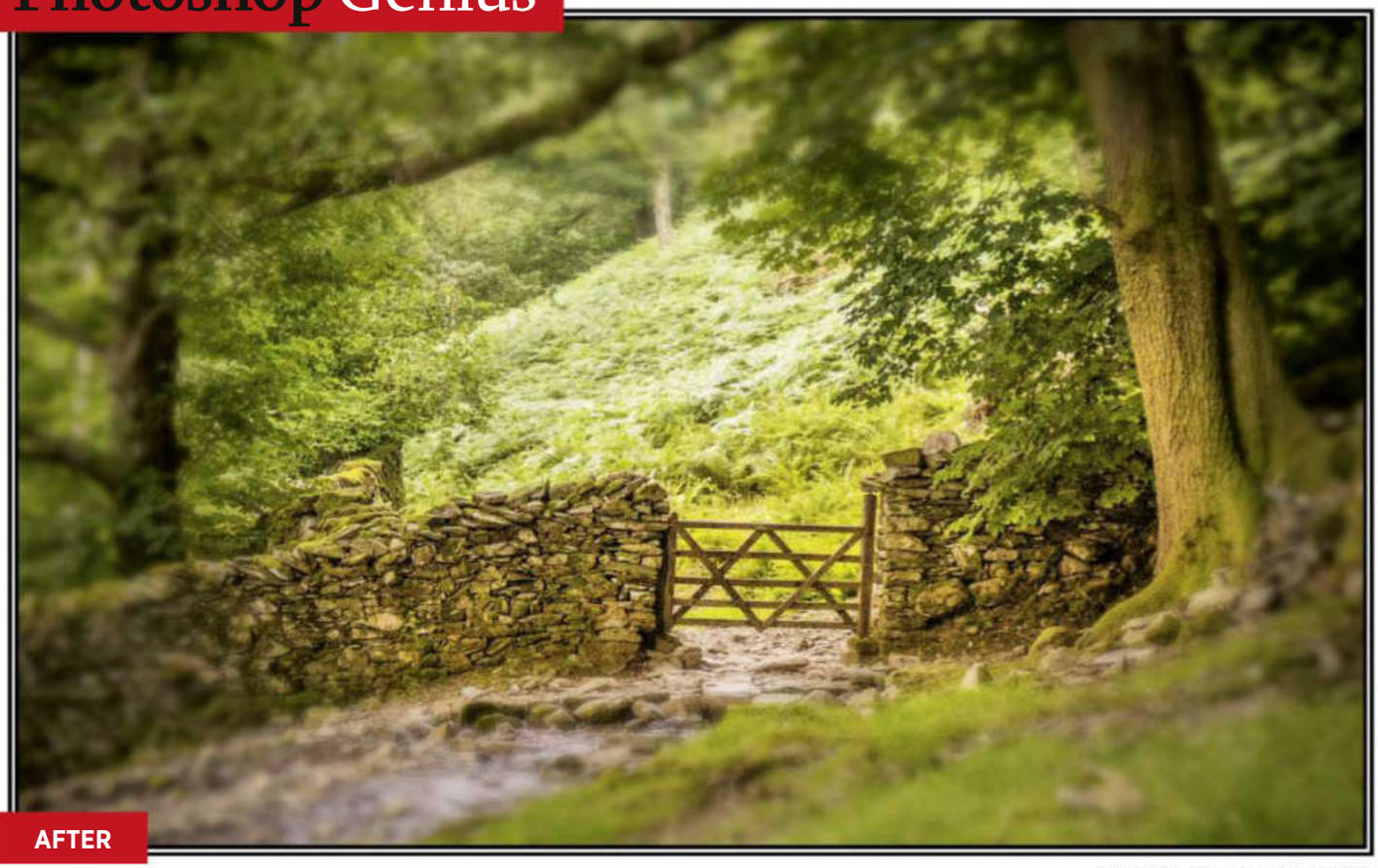
3 Use the Unsharp Mask filter to boost detail

Make sure your new Layer is active, and in Photoshop go to **Filter→Sharpen→Unsharp Mask**. In Elements, go to **Enhance→Unsharp Mask**. You can drag the image in the Preview window to find the area of the frame being sharpened. The **Amount** slider is given as a percentage and governs how much sharpening is applied. For the example image it was set to **200%**. The **Radius** slider dictates how far from the detail edge the sharpening occurs. Be careful not to push this slider too far, or you'll create an unnatural 'halo' effect. We set **Radius** to **3.0px**. The **Threshold** slider controls how much contrast there is between detailed edges before Sharpening is applied. At **0**, every detail is sharpened, while at **255**, nothing is sharpened. You can use this to prevent low detail areas from being sharpened, as this will enhance Noise and reduce quality. Adjust the slider and observe the effects to get the balance right for your own image, but for our example, **Threshold** was set to **8**. Click **OK** to exit the apply the effect and exit Unsharp Mask.



4 Merge Layers and then save

To finish, you'll need to compress your two Layers into one. You can do this by going to **Layer→Merge Layers** or by pressing **Ctrl+E** for a shortcut. You'll notice that your Layers Palette will only contain a **Background** Layer, but it now has your selective sharpening effect applied. To save your image, going to **File→Save** will overwrite your original pic with your sharpened version. To save it as a different version and keep your original untouched, you'll need to go to **File→Save As**, or press **Ctrl+Shift+S**. In the **Save As** dialogue box, type in a new name for your shot, and choose the folder and file format in which you'd like to save the picture. Click **Save** to complete the task, and then press **Ctrl+W** to close down the image.



AFTER

The free frames allow you to present your shots neatly, plus you can add a title and credit to give a professionally designed finish.

THE GATE, LAKE DISTRICT

PHOTOGRAPHY BY JON ADAMS

GIVE YOUR SHOTS A PRO FINISH

Use our free presentation borders to elevate your pics and create a commercial look ready for framing

TECHNIQUE & PICS BY JON ADAMS

AN INSTANT WAY TO MAKE ANY SHOT look even better is to present it in a slick, professional way. Adding a keyline border with a clean white margin to offset your pic not only gives it a 'published' appearance that instantly elevates its status, it also allows you to title and credit your work. The other advantage is you don't need a card mount to centre your shot in a picture frame – just use a frame the same size as your print, and slot the picture in place. Our free templates do all the hard work for you, so follow the easy step-by-step, and make your pics gallery-ready!

At a glance

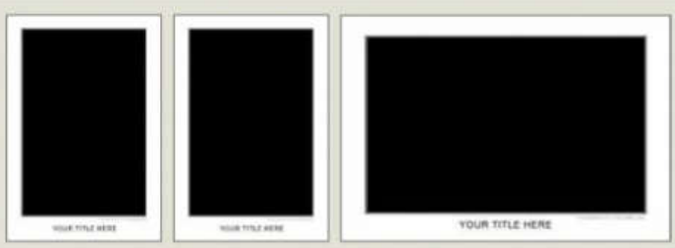
YOU'LL LEARN How to add your pictures to the free presentation templates supplied with this issue
YOU'LL NEED Photoshop or Elements
TIME REQUIRED 5 minutes
DIFFICULTY LEVEL Easy

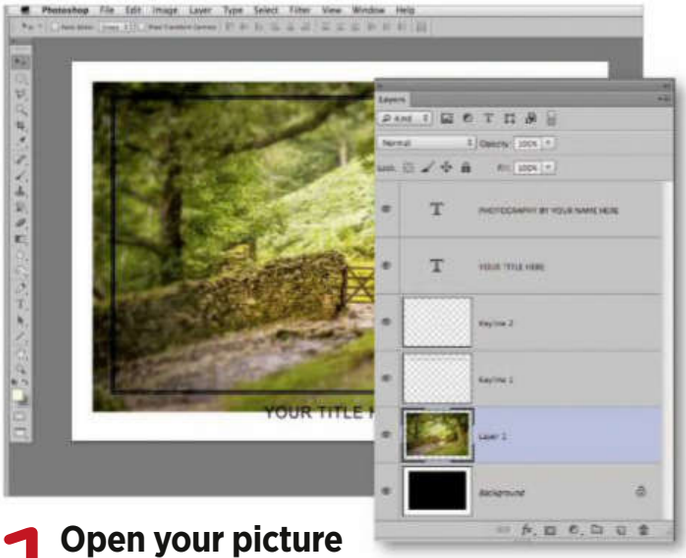
On the disc

VIDEO LESSONS Watch as Jon runs through this great technique on your computer screen.
START IMAGES The free borders are available in A3+, A3, A4 and A5 and can be found in the Start Images folder.

BEFORE

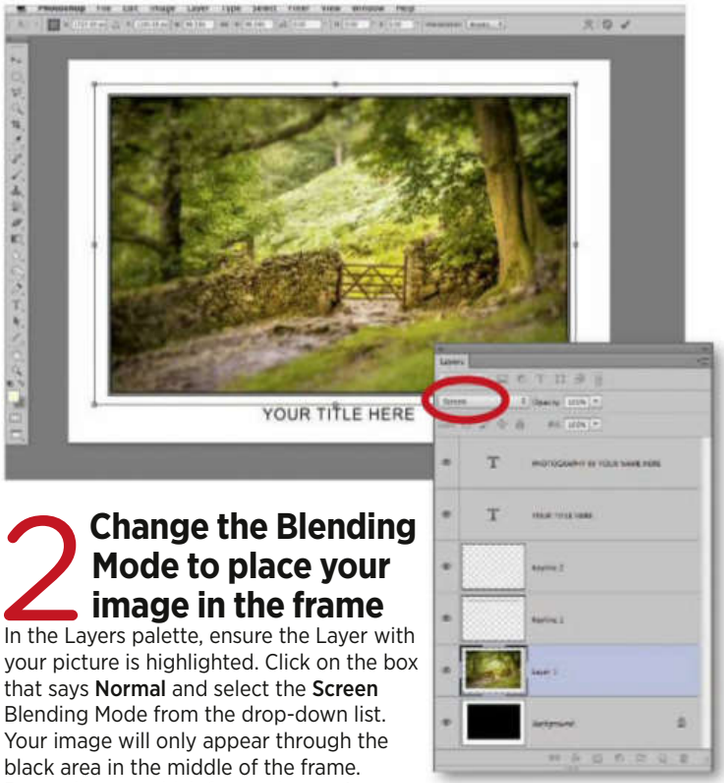
The eight free frames in the Start Images folder are created and scaled to the regular paper sizes of A3+, A3, A4 and A5, so it's easy to make great looking vertical or horizontal prints with a squared-off border.





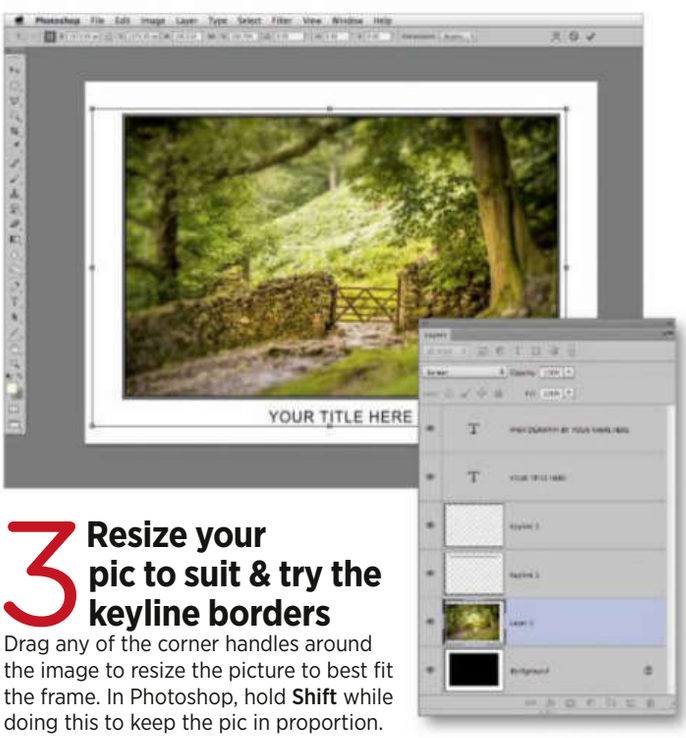
1 Open your picture and your frame

In Photoshop or Elements, open the shot you want to add a frame to. When it's on screen, make a note of its orientation (horizontal or vertical) then go to **Select→All** (**Ctrl+A**) to surround it with marching ants, then **Edit→Copy** (**Ctrl+C**) to copy it into memory. Now close it down (**Ctrl+W**). Next, open one of the free frames from the folder within the Start Images. Choose the paper size you want to print at (A3+, A3, A4 or A5) and pick the orientation to match your image ('horiz' or 'vert'). Double-click on the appropriate file (*A4 horiz. psd* was used in this example) and it'll pop up on screen. Go to **Edit→Paste** (**Ctrl+V**) and your image will appear over the top. Open your Layers (**Window→Layers**) and you'll see the picture sitting above the **Background** Layer in the Layers stack.



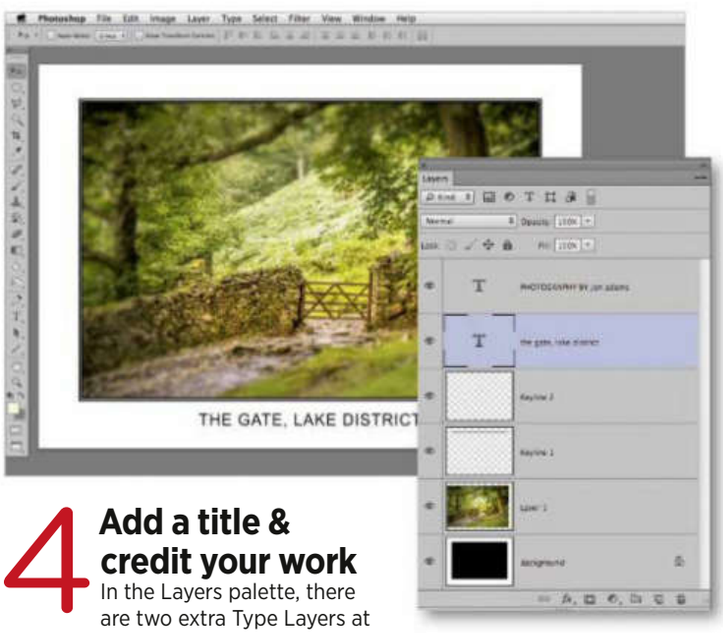
2 Change the Blending Mode to place your image in the frame

In the Layers palette, ensure the Layer with your picture is highlighted. Click on the box that says **Normal** and select the **Screen** Blending Mode from the drop-down list. Your image will only appear through the black area in the middle of the frame. Depending on which frame size you've chosen, the image may be too big or too small to fit. To resize it, hit **Ctrl+Minus** to create some space around your work area, then hit **Ctrl+T** to go into **Free Transform** mode. A bounding box with eight control handles will appear around the image.



3 Resize your pic to suit & try the keyline borders

Drag any of the corner handles around the image to resize the picture to best fit the frame. In Photoshop, hold **Shift** while doing this to keep the pic in proportion. In Elements, ensure that the **Constrain Proportions** box is ticked in the Tool Options bar. Once it's sized the way you want, you want, hit **Return** to confirm the changes. Now switch on/off the two keyline Layers using the 'eye' icons to see which border effect best complements your image. If you want to make them more subtle, click on the keyline Layer to make it active, then reduce the opacity slider to make it grey rather than black.



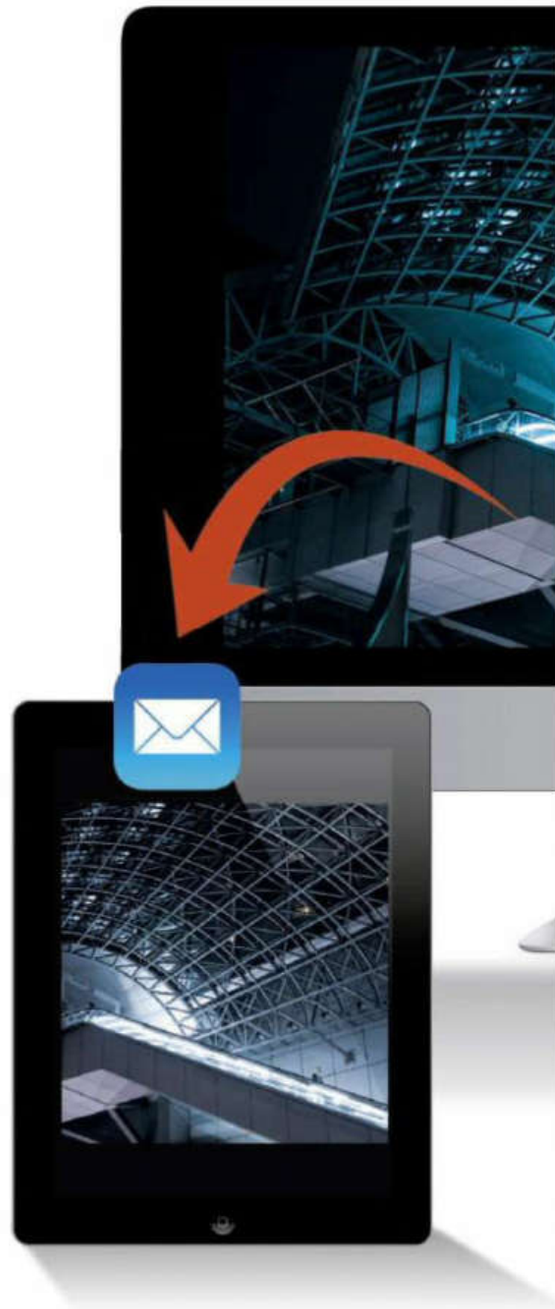
4 Add a title & credit your work

In the Layers palette, there are two extra Type Layers at the top. These will allow you to add a title and a credit. On the top Layer, double-click on the Layer thumbnail (directly on the big 'T') and the text will be highlighted. On the image itself, leave *PHOTOGRAPHY BY* and highlight just the part that says *YOUR NAME HERE.* Type your name, then double-click on the 'T' of the Layer below to highlight the title. Type your title here, then click on the **Move tool** to exit the type-editing functions. If you want to change the font style or the size of the text, double-click on the T again, and adjust either in the Tool Options bar. You can also make the text more subtle by adjusting the Opacity. When you're done, go to **File→Save As** and save your framed pic as a maximum quality JPEG under a new name.

SAVING YOUR IMAGES

Discover the file formats you need and the pixel dimensions to use for the best results

TECHNIQUE & PICS BY ANDY HEATHER



At a glance

YOU'LL LEARN
The best file types and resolutions for different uses
YOU'LL NEED
Photoshop/Elements
DIFFICULTY LEVEL
Easy

IN PHOTOSHOP, SAVING A FILE is not quite as simple as pressing **Ctrl+S**. With so many file formats and so many different places to share images, it can be difficult to know what to do when it comes to the seemingly simple task of keeping your shots archived for posterity.

Here, we're going to explain the differences between the many ways to save your images and recommend the best formats and resolutions. Some file types, such as PSD and TIFF are called 'lossless'. That means the quality of your image doesn't degrade when you save to these formats. Others, such as JPEG and GIF, are called 'lossy' which means they compress the size of the stored file at the expense of image quality.

There is a place for both types in any photographer's workflow – the key is knowing when to use each one. We'll help you understand this and more, so read on to find out all you ever wanted to know about resolutions and file types!

File Types for Photographers

RAW – RAW is a term given to uncompressed image files straight from the camera's sensor. DSLRs, CSCs and some compacts can output in RAW format. There are several types of RAW developed by different camera makers. It's the optimum shooting format as it provides the best image quality and contains lots of 'hidden' data that can be post-processed to make your shots look their very best.

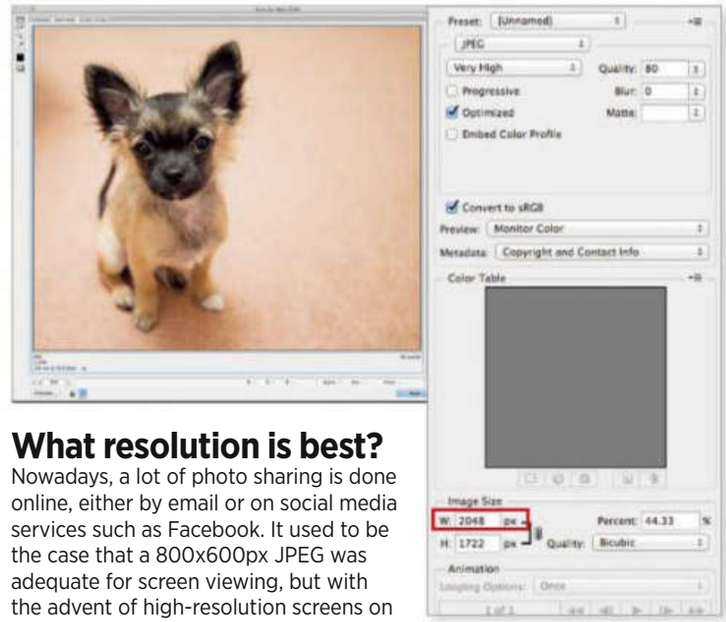
DNG – Standing for Digital Negative, a DNG is a type of RAW file developed by Adobe. A few cameras shoot in DNG format, but it's also common for photographers to use Lightroom or Adobe DNG Converter to convert their RAW files to DNG. This format has two chief benefits: it creates slightly smaller files at no cost to image quality, and will open in nearly all available RAW conversion software.

PSD – Standing for Photoshop Document, this is an Adobe format that's best used for files you're editing in Photoshop and want to continue to edit in the future. It keeps Layers intact, preserves transparency and is non-destructive. Because it's lossless, it results in much bigger file sizes than JPEG. Converting to JPEG merges all the Layers, so they're no longer individually editable.

TIFF – TIFF does a similar job to PSD, but it includes some useful compression options. When saving in Photoshop, you're given the option of compressing the entire image, or even each Layer, as a ZIP file. This slows down read and write speeds, but saves valuable hard disk space when working with large files.

JPEG – This is a compression standard developed by the Joint Photographic Experts Group, after which it is named. It's a highly-compressed format that's commonly used for sharing photos online. It's also lossy, which means it results in small file sizes, but it reduces image quality. The smaller the size of the stored file, the more the image quality is degraded.

Others – GIF is the format intended for flat-colour designs and illustrations. It's sometimes used for photos in adverts online, but it doesn't handle graduated colour changes well. PNG was developed as a replacement for GIF. PNG can be used to preserve transparency and reduce file size, but it's generally used for illustrations.



What resolution is best?

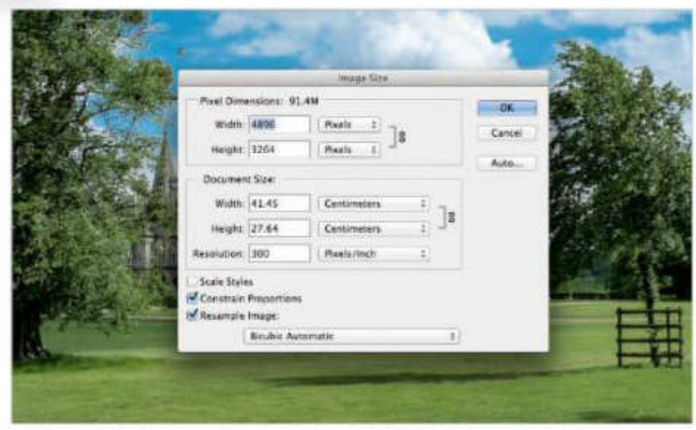
Nowadays, a lot of photo sharing is done online, either by email or on social media services such as Facebook. It used to be the case that a 800x600px JPEG was adequate for screen viewing, but with the advent of high-resolution screens on smartphones and tablets, a larger size is now preferable. In the Apple ecosystem, your images are stored in the cloud and shared between devices by means of the Photo Stream. On iPads, these images are shared at a resolution of 2048x1536px.

Popular photo-sharing site *500px.com* also displays shots at 2048px on their longest edge. This is a good guide as to the best size to use when resizing images to export as JPEGs. Saving your shots so they're 2048px on the longest side means they'll look good on a tablet with a high pixel-density display, but they won't take up any more of your storage space than necessary.

Saving files for online use

To make sure your colours look the same across devices, it's a good idea to use the **Save For Web** function in Photoshop. That's because it gives you the option of converting the colour space to sRGB, which is the best way to ensure your colours will display correctly on the web or over email. Save for Web also strips out unnecessary metadata to keep the file size as small as possible. Best of all, it allows you to resize your shot as you save it, making for an efficient workflow. Going to **File→Save As** and choosing **JPEG** will produce JPEGs that take up more space and are likely to look different to the original when shared online for reasons relating to colour profiles.

To save for online use, go to **File→Save for Web**. From the list, select **JPEG** and set the **Quality** to **80**. Going any higher will increase the file size and provide little to no discernible improvement in image quality. Make sure that **Optimized** is ticked, and leave **Progressive** and **Embed Color Profile** unticked. Tick the **Convert to sRGB** option and under where it says **Image Size**, change the longest side to **2048px**. Finally, hit the **Save** button and give your shot a new name.



Saving files for making prints

When saving for print use, it's important to pay attention to the number of Pixels per Inch in your image. The industry standard figure is 300ppi for a top quality print. At arm's length though, most people can't discern between 150ppi and 300ppi, so if you want to make a big print and put it behind glass on a wall, 150ppi may well suffice. However, for prints the same quality as those seen in magazines, books and galleries, ensure your image is 300ppi before sending the file to your inkjet or off to an online print lab.

To do this go to **Image→Image Size** and at the bottom of the palette, make sure **Resample Image** is NOT ticked and then type in **300** next to **Resolution**. A 16MP shot, such as the example above, measures 4896x3264px. With the resolution set to 300ppi, this gives a print measuring 41.45 x 27.64cm, which is almost A3 in size.

If you were to sacrifice some image quality, you could set the ppi value to 150 to create a larger print. By halving the pixel density you double the length and width to give 82.91 x 55.27cm. A print lab will tell you the file format they require, but usually a JPEG is fine.

YOUR PICTURES

Get some friendly, constructive advice from our experts! We pay for every pic published, so send your best shots to **dpimages@bauermedia.co.uk**

HOVERFLY
by Helen Clarke

Camera Canon 350D & Tamron 90mm macro lens **Exposure** 1/320sec @ f/5.6, ISO 400 **Software** Adobe Camera Raw & Photoshop

I've planted a Field Scabious flower in my garden to attract insects so I can photograph them, but it has a narrow stem so is prone to movement. To overcome this I used a flexible clamp called Wimberley The Plamp to secure it. When this hoverfly landed on it I focused on its head to make sure it was sharp.

DAN SAYS "Helen's hoverfly pic is packed full of amazing detail and this is all down to her focusing technique. Focusing becomes incredibly difficult when shooting macro images because your depth-of-field is much more shallow, even when using a small aperture. Helen has to be praised for the sharpness of this shot because she's managed to get the head sharply focused despite using a relatively large aperture of f/5.6. Any slight movement from Helen or her subject would have thrown the focus off completely, but the shallow depth-of-field has made the hoverfly's head the focal point, and the specks of pollen and green background have been transformed into a diffused blur.

"Helen has positioned the head of her miniature critter about a third of the way in from the top and right of the frame edges. This works well, but it's the tiny details that give impact to this shot, and to make it as eye-catching as possible I think a tighter crop would help. It'd make those eyes more prominent in the frame. This is an easy task in Photoshop – just click on the **Crop tool** and drag it over your subject to make it larger.

"Another compositional change that would make this shot even stronger is to extend the canvas to the right. This turns the shot from portrait to landscape format, and the benefit is the hoverfly has a little more room to breathe. Space behind a subject is called 'dead space', and by extending the canvas in front of the fly you create 'active space' – giving your subject room to move into. You can extend a frame seamlessly in Photoshop or Elements, and it's a useful technique to learn (see panel)."

MATTY SAYS "It's a common macro error to focus on the wrong part of the insect or to take the shot when the insect is facing away from you, but Helen has avoided both of these by patiently waiting for the right moment.

"I agree with Dan, as I think it's the tiny details that give this pic the wow-factor and sense of wonder. While the speckled pollen on the hoverfly's back adds an extra element, if I was being completely critical there's a small dot on its eye which is a little distracting. This tiny blemish is really easy to fix with the **Spot Healing Brush tool** in Photoshop. Resize your brush with the [and] keys so it's a little bigger than the spot, then click on it to remove it.

"Metering can be tricky when you have a bright background and a dark subject. The hoverfly in this shot is slightly underexposed and I'd be tempted to correct this with a **Levels** Adjustment Layer. First make a rough Selection of the part you want to brighten, then click on **Refine Edge** and increase the **Feather** slider to soften the edge. Now click the **Adjustment Layer** icon in the Layers palette and select **Levels** from the list. In the palette, drag the **Midtones** slider to the left to brighten.

"These adjustments are almost as small as Helen's subject, but they turn a good shot into a great one. Well done!"

Your experts

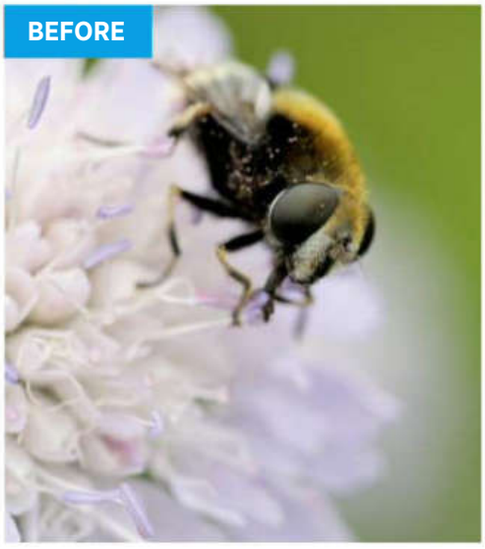
***Digital Photo*'s technical editor, Dan, and assistant editor, Matty, are on hand to help with insightful shooting and editing tips. To have your work shown and assessed in *Your Pictures*, email a selection of no more than five images to the address on the left, and put *Your Pictures* in the subject box.**

The eyes are the focal point of this shot and a tight crop lets them dominate the frame

AFTER

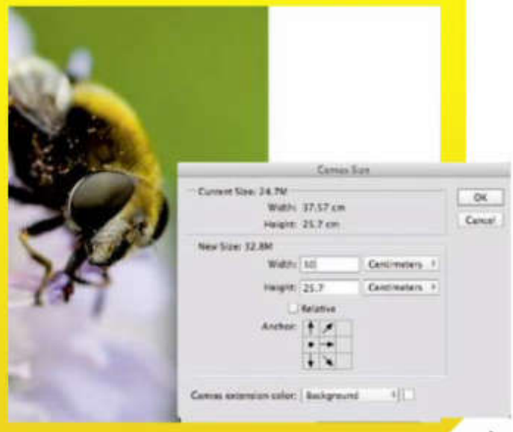
A tight crop reveals all the glorious detail in this macro shot and extending the canvas gives Helen's subject room to move in to.

BEFORE



Expert advice Extend your image frame

To extend an image In Photoshop, hit **Ctrl+J** to duplicate your **Background** Layer, then go up to **Image→Resize→Canvas Size**. Clicking on the middle left **Anchor** box means that the canvas will be extended to the right, so do this and then enter a new **Width** for the size you'd like to extend the canvas to, before hitting **OK**. In the Layers palette, click on the **Background** Layer and then click the **Adjustment Layer** icon, and select **Solid Colour** from the drop-down list. Your cursor will become an eyedropper and you can click on the image until you get a close match. When you do, hit **OK**. Now click on your top Layer and use the **Eraser tool** to blend it into the new background.



AFTER

After some intricate cloning & healing work in Photoshop, Harry's stark tree stands free from distractions with a timeless, mono finish.

DRIFTWOOD BEACH
by Harry McAtominey

Camera Nikon D7000 & 18-200mm lens **Exposure** 1/1000sec @ f/8, ISO 125 **Software** Photoshop CC and Nik Color Efex Pro

I was on holiday in Jekyll Island, South Carolina and its aptly named Driftwood Beach was recommended for its lighthouse. The lighthouse was rather average, but the miles of dead trees sprawled across the beach was a photographer's heaven! I shot a bracket of images and turned this tree into an HDR pic.

MATTY SAYS "Wow – this beach is a real find! The gnarly tree has certainly taken a bit of a battering over the years, but it's loaded with texture and character.

"There's no way Harry could have avoided the other trees scattered across the beach at the time of capture, but they do draw the eye away from the main focal point. A cleaner backdrop would help the lone tree to stand out and enhance the feeling of solitude. Photoshop or Elements have all the tools needed (see panel).

"For me this shot is screaming out for a mono conversion. Hitting **Ctrl**+**Shift**+U will drain the pic of colour but leave it rather flat. To fix this, I'd increase contrast with a little dodging and burning. Select the **Burn tool** and in the Tool Options bar, set **Range** to **Shadows** and **Exposure** to 5%. Paint over the darkest areas to make them darker still. Now switch to the **Dodge tool**, set **Range** to **Highlights** and **Exposure** to 5%, then paint over the brighter parts. These changes will take some time, but losing the tree's companions gives a really striking image!"

BEFORE

Expert advice Clean up distractions in Elements

The key to removing large obstacles from your pic is do the repairs in small chunks. Duplicate your background Layer by hitting Ctrl+J and then zoom in on the offending area by hitting Ctrl+Plus a few times. Go to the Toolbox and click on the Spot Healing Brush tool, you can then paint over the area you'd like to remove. If you have the full version of Photoshop you can also use the Patch tool, this allows you to draw a Selection around the area you'd like to remove and source a suitable area to replace it.

WHITSTABLE SUNSET
by Mike Peak

Camera Canon 600D & Sigma 17-70mm lens **Exposure** 1/30sec @ f/5.6, ISO 200 **Software** HDRsoft Photomatix Essentials 4

As a member of the Canterbury Photographic Society, I get to go on a number of evening shoots over the summer months. On this occasion we were in Whitstable and I wanted to try my hand at a High Dynamic Range (HDR) exposure of the Old Neptune pub by the beach. I set up my Canon EOS 600D DSLR on a tripod, took three bracketed RAW files and blended the exposures together in Photomatix Essentials 4.

DAN SAYS "Most of us are likely to pack up and head home when the sun goes down, but the gentle yellow and red hues in Mike's shot show that the twilight tones that follow sunset are wonderfully photogenic.

"There's no doubting that this is an attractive scene, but the tight framing with the pub right at the edge of the photo makes it feel a little claustrophobic. Mike's original RAW file reveals he actually got it right first time with a much wider composition. But, I can see why he cropped this part out, as there are no sunset colours on the left in the original pic. I'd be tempted to restore Mike's initial composition to give the building more space to breathe, then to add colour to the dull side, I'd borrow some pixels from the sunset on the right. Using the **Lasso tool** you can make a Selection of the sunset area, then go to **Refine Edge** and use a **Feather** value of **20px** to soften it. By hitting **Ctrl+J** you can punch this area of sky into a new Layer, and then go to **Edit→Transform→Flip Horizontal** (Photoshop) or **Image→Rotate→Flip Layer Horizontal** (Elements) so that it's facing the other way. Now select the **Move tool** from the Toolbox and drag the colourful chunk of sky into position. All that's left is to use the **Eraser tool** to blend in the edges.

"Mike shot in the hour after sunset, often referred to as the 'blue' or 'magic' hour. I think an HDR conversion was absolutely the right thing to do as cameras can struggle with metering when faced with difficult lighting conditions. The great thing about HDR images is their incredible range of tones, but the effect is easy to overdo and Mike should be commended for achieving a subtle, true-to-life finish.

"The bright sky would likely burn out to pure white in a standard exposure, but the HDR has preserved those lovely warm colours. However, I'd expect to see an equal amount of detail in the foreground, but it's a little underexposed. Brightening specific areas is a relatively straightforward task in Photoshop or Elements and this would help to balance out the overall effect (see panel).

"These tweaks make the shot one to proudly hang on the wall."

BEFORE

Expert advice Make pools of light in Photoshop

The foreground of this shot needs to be brightened a little. In Photoshop go to your Layers palette (Window→Layers), click on the Adjustment Layer icon and choose Levels from the list. In the Levels palette, drag the middle Midtones slider to the left a little to brighten the pic and hit OK.

Press Ctrl+I to invert your Levels Layer Mask, then click on the Brush tool in the Toolbox. Press D for a white foreground colour, and you can now paint over the specific areas you'd like to brighten.

AFTER

Reverting this landscape to its original framing gives the building more space to breathe, while some selective brightening on the darker foreground helps to balance the exposure.

AFTER

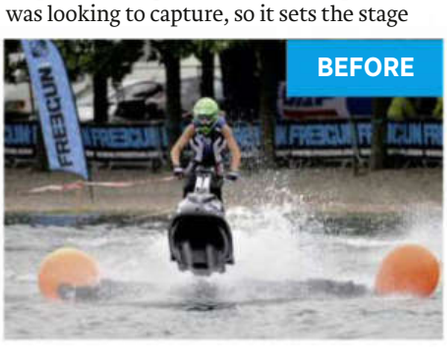
The background has been blurred to better isolate the subject, and the buoy on the right has been repositioned to give a symmetrical composition.

AIRBORNE JETSKI
by Stephen Caley

Camera Nikon D610 & Tamron 150-600mm f/5-6.3 lens @ 600mm **Exposure** 1/500sec @ f/6.3, ISO 320 **Software** Elements

Taken at the International Jetsport Grand Prix in Doncaster, this shot shows one of the competitors on a practice run. I tried to give a sense of the speed and power in this exciting sport. It proved difficult to do that and get a sharp image, particularly with all the spray and at the long end of my 150-600mm zoom. I made minor alterations to levels and sharpness in Elements, and also cropped slightly, though I think this could be improved.

MATTY SAYS "The immediate impact of Stephen's shot gives that sense of speed he was looking to capture, so it sets the stage well. He's caught the jetski while it's airborne too, and this further reinforces the energy in the shot. The blast of white spray has been frozen by a fast shutter speed of 1/500sec, and the two buoys help to frame the subject, as well as adding a splash of vibrant colour to the image. Stephen has shot this at the maximum focal length of his 150-600mm telezoom, and considering the pace of the subject, I think he's done well.



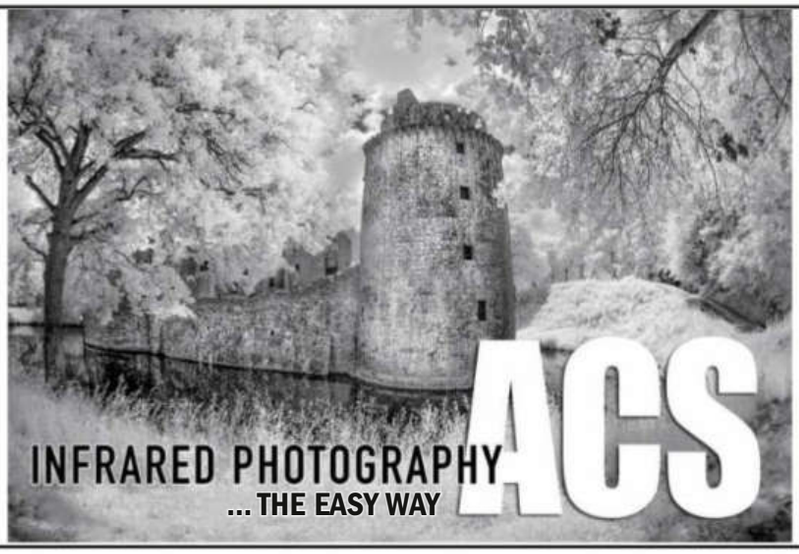
"Inspecting the shot closely, it's apparent that the rider isn't quite pin-sharp. Subjects moving swiftly towards you present one of the biggest challenges for an AF system, as by the time you've locked focus and pressed the shutter, it will have moved out of the sweet spot. Continuous AF mode (called AF-C on Nikon models and AI Servo on Canon) gives your best chance of capturing a sharp shot, as it tracks the subject's movement. It's best to try and keep the AF point over the target for a second or so before firing, as this gives the system time to lock on and start tracking.

"I like Stephen's energetic image, but while the background keeps the context of the event, for me, the advertising banners are a little distracting. To tone them down without removing them, I'd make a really accurate Selection of the subject with the **Polygonal Lasso**, and then punch it into a new Layer (**Ctrl+J**). After duplicating the original **Background** Layer, I'd then use the **Gaussian Blur** filter over the area behind the subject. This would leave a blurry halo around the rider, so I'd enlarge their cutout to cover the halo, and clone out any parts that were left. With the Clone tool in use, I'd also remove the hazard tape, as the bright red and white stripes cut straight through the rider.

"With a cleaner, softer background, the rider is better isolated, and just needs a little selective sharpening to disguise the slightly soft focus. This gets the shot looking great, but the final icing on the cake would be to move the buoy on the right to give the framing a little more symmetry. This is achieved by making a Selection around it, placing it on a new Layer and then using the **Move tool** to change its position. The hard edge around the Selection can be blended into the existing background with the **Eraser**.

"These changes add even more impact to Stephen's shot, but only enhance the drama he's managed to capture in the original."

PHOTO CREDIT: CLIVE R. HAYNES FRPS WWW.CRHFOTO.CO.UK
CAMERA MODEL: ACS CONVERTED NIKON D70IR 720NM



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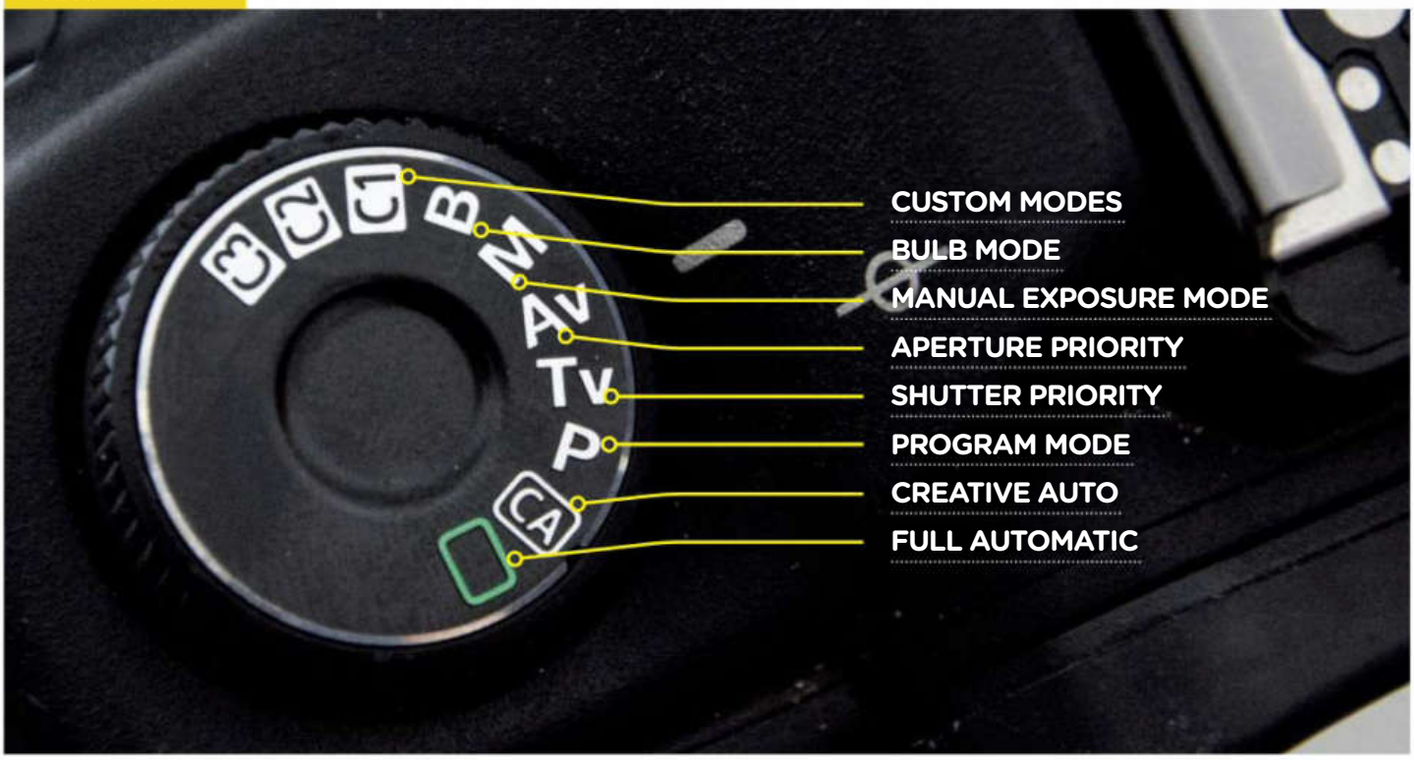
JON ADAMS For shooting and Photoshop queries, Jon is on hand to help solve any problems you have.

DAN MOLD With a background in photographic retail, Tech Ed Dan can advise on all aspects of camera kit.

MATTY GRAHAM Assistant Editor Matty is never seen without his DSLR, and is brimming with shooting tips.

ANDY HEATHER Andy worked as a commercial photographer in Japan, and is overflowing with advice.

KNOW-HOW



What do my creative modes do?

Q I'm relatively new to owning a DSLR and have been using my Sony A58 in its Intelligent Auto mode as this feels similar to my previous compact. But, I realise there's much more to DSLRs than pointing and shooting, so which exposure mode should I be using instead? ***Robbie Stone***

DAN SAYS Most photographers start out using a DSLR's Auto mode, as in the majority of cases, it'll give you a well exposed shot. There's a huge amount of technical information to take on board with a DSLR, and the Auto mode lets you concentrate on composition and focusing, and leaves the camera to take care of the other stuff. But what exactly is all this 'other stuff'?

Well, the parameters that govern exposure are: the size of the Aperture – the 'hole' in the lens that controls the amount of light coming in; the Shutter Speed – which determines the length of time the sensor is exposed to light; and the ISO – which adjusts how sensitive the imaging chip is to light. The latter is just like the film speed on old SLRs, only you can change it whenever you like.

One of the main benefits of creative cameras like DSLRs is their Program, Shutter priority, Aperture priority and Manual modes.

Program is the most automatic of the bunch. It controls the aperture and shutter speed but you set everything else, such as focus and ISO value. Manual mode is the complete opposite of full Auto and it can be quite daunting as you control absolutely everything. But, it's the semi-automatic Shutter priority and Aperture priority modes that are both easy to use and really put you in the driving seat for maximum creativity. Understanding these modes is vital to getting the best out of your camera, so here's a breakdown of what they do...

What the creative modes on a DSLR do

Aperture priority (A or Av)

This is the most important creative mode and is the one you should use for the majority of your shooting. It allows you to adjust the Aperture value, which controls how much light hits the sensor. The wider the aperture, the more light will come in and the faster you can shoot. Aperture also affects your depth-of-field, and this is essentially how much of your shot is in sharp focus. Setting a wide aperture such as f/3.5-5.6 on a kit lens gives you a shallow depth-of-field and makes it easier to blur backgrounds, while a high aperture of f/22 will give you good sharpness all the way through your shot. Pro lenses have very wide maximum apertures to make it really easy to throw backgrounds into a diffused blur and bring the emphasis onto your subject.

Shutter priority (S or Tv)

Shutter priority, denoted by the S or Tv (Time Value) setting allows you to control how long the sensor is exposed to light. When motion is a key ingredient in your image, this is the best mode to use. If you want to freeze the motion of a bird in flight or a runner crossing the finish line you need to set a fast shutter speed like 1/2000sec. But if you want to capture movement as a creative blur, you can set the shutter to be open for whole seconds – though you'll need to use a tripod to keep the camera still. In Shutter priority you're still able to control the ISO value, but the camera will automatically set the aperture so the shot is correctly exposed.

It's quite easy to under or overexpose in this mode because your aperture may not be able to open wide enough to get the correct exposure, or your ISO value may be set too low. When this happens your aperture value will flash on the screen to let you know that the image will be too dark or too bright. This makes Aperture priority a better choice for everyday, general shooting.

ALL IMAGES DAN MOLD

Manual mode (M)

As the name suggests, this mode puts you firmly in the driving seat! There are some occasions when you'll want to be in control of the aperture, shutter speed and ISO. Night shooting is one example, and another is when you want to shoot the same scene with identical camera settings repeatedly. This mode rules out any automation on the camera's part and bypasses the light metering entirely, so you're telling the camera exactly what to do. We'd recommend you get to grips with Aperture and Shutter priority before venturing into this mode, as you'll often need to take a few test shots to get the exposure right. This means you could miss the moment if it's the first time you've used it. It's also a good tip to use Aperture priority first, take note of the exposure settings and then switch over to Manual to fine tune the shot to your liking.

SRB PHOTOGRAPHIC Est. 1967

"If you're hesitant about investing in filters, SRB is a good place to start. An Excellent choice."
- Amateur Photographer Magazine, 2014

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Camera Photographer GOOD SERVICE AWARD 2015 GOLD

Circular Filters

The ND1000 is our award-winning, 10 stop long exposure filter! By far the most popular filter at SRB!

ND1000 Filters

★★★★ - Photoplus Mag

46mm	£22.50	62mm	£27.00
49mm	£23.50	67mm	£28.50
52mm	£24.00	72mm	£29.50
55mm	£24.50	77mm	£32.50
58mm	£25.50	82mm	£37.50

"Best Value" in Photoplus Big Stopper Group Test

Circular Polarisers

Sizes: 25 to 86mm

49mm	£16.75	67mm	£18.00
52mm	£17.00	72mm	£19.00
55mm	£17.00	77mm	£21.00
58mm	£17.00	82mm	£26.00
62mm	£17.50	86mm	£33.50

ND Fader Filter

★★★★ - AP Magazine

46mm	£26.00	62mm	£32.00
49mm	£27.00	67mm	£35.00
52mm	£27.50	72mm	£36.00
55mm	£29.50	77mm	£39.00
58mm	£31.00		

4 stars from AP Magazine for Quality & Value

UV Filters

Sizes: 25 to 105mm

46mm	£10.95	62mm	£13.95
49mm	£12.95	67mm	£14.95
52mm	£12.95	72mm	£15.95
55mm	£12.95	77mm	£17.95
58mm	£13.95	82mm	£19.95

ND Filters

Sizes: 27 to 82mm

46mm	£17.00	62mm	£21.00
49mm	£17.00	67mm	£23.00
52mm	£18.00	72mm	£26.00
55mm	£19.00	77mm	£28.00
58mm	£20.00	82mm	£31.00

4 Grades: 0.3, 0.6, 0.9, 1.2

ND Grad Filters

Sizes: 40.5 to 82mm

46mm	£16.50	62mm	£20.00
49mm	£17.00	67mm	£21.00
52mm	£18.00	72mm	£21.50
55mm	£19.00	77mm	£22.50
58mm	£19.50	82mm	£24.50

4 Grades: 0.3, 0.6, 0.9, 1.2

★★★★★ Digital Camera ND Group Test

The SRB ND and ND Grad Filters have been listed in Amateur Photographer's Top 10 Landscape Accessories

More Circular Filters...

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Infrared Filters	from £17.50	Colour Grad Filters*	from £14.00
Skylight Filters	from £12.50	Star Effect 4-Point	from £14.00
Black & White Filters*	from £14.00	Star Effect 6-Point	from £14.00

*4 Types: Red, Yellow Green, Orange

*3 Types: Blue, Sunset, Twilight

Square Filters

Pro Filter Holder (NEW!)

Aluminium Filter Holder

A Size	£19.95
P Size	£24.95
P Size W/A	£24.95

Pro Filter Kits (NEW!)

3 types: Full ND, Soft ND, Hard ND

A Size Starter	£34.95
A Size Filter	£49.95
P Size Starter	£39.50
P Size Filter	£54.95

Square Filter Holders

A Size	£8.95
P Size	£5.00
P Size W/A	£5.00
Adaptor Rings	£4.95

Square Filter Kits

3 types: Full ND, Soft ND, Hard ND

A Size Starter	£24.95
A Size Filter	£39.95
P Size Starter	£24.95
P Size Filter	£39.95

Starter Kit: 1 Filter Filter Kit: 3 Filters

Individual Square Filters

A & P Size Resin Filters

0.3 Full ND	£13.50	0.9 Hard ND Grad	£13.50	0.3 ND Glass Pro	£29.95
0.6 Full ND	£13.50	1.2 Hard ND Grad	£15.95	0.6 ND Glass Pro	£29.95
0.9 Full ND	£13.50	Circular Polariser	£26.00	0.9 ND Glass Pro	£29.95
1.2 Full ND	£15.95	Blue Grad	£13.50	ND Glass Pro Set	£79.95
0.3 Soft ND Grad	£13.50	Sunset Grad	£13.50		
0.6 Soft ND Grad	£13.50	Twilight Grad	£13.50		
0.9 Soft ND Grad	£13.50	Black & White Filters	£13.50		
1.2 Soft ND Grad	£15.95	4x Star Effect	£13.50		
0.3 Hard ND Grad	£13.50	6x Star Effect	£13.50		
0.6 Hard ND Grad	£13.50				

★★★★★

5 stars for build, image quality & value for money. April 2014

Close up Lens Sets

Sets include:
1+ Lens
2+ Lens
4+ Lens
10+ Lens

★★★★★ Photoplus Best on Test 90% rating

52mm	£17.00	67mm	£21.50
55mm	£18.00	72mm	£23.00
58mm	£19.00	77mm	£24.50
62mm	£20.00		

Step Rings

Prices from £4.95

Thread size ranges: 37mm - 105mm

All sizes available online

Auto Extension Tubes

Set of three extension tubes

★★★★★ Digital Photo Mag, 2015

Canon EOS	from £29.95	Nikon	£54.95
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Micro 4/3	£49.95	Sony Alpha	£54.95
Nikon 1	£49.95	Sony NEX	£49.95

Lens Adaptors

Camera		Lens	£	Camera		Lens	£
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Canon EOS	to	Nikon	£22.95	Micro 4/3	to	Nikon G	£34.95
Canon EOS	to	Nikon G*	£39.95	Micro 4/3	to	M42	£29.95
Canon EOS	to	Pentax K	£24.95	Micro 4/3	to	Olympus OM	£29.95
Canon EOS	to	Olympus OM	£24.95	Micro 4/3	to	Minolta MD	£29.95
Canon EOS	to	Con/Yash	£24.95	Micro 4/3	to	Leica R	£29.95
Canon EOS	to	Leica R	£22.95	Micro 4/3	to	Leica M	£29.95
Canon EOS	to	Leica M	£24.95	Micro 4/3	to	Sony Alpha	£34.95
Canon EOS	to	Canon FD	£44.95	Micro 4/3	to	Pentax K	£29.95
Canon EOS-M	to	Canon EOS	£29.95	Micro 4/3	to	Canon FD	£29.95
Canon EOS-M	to	Leica M	£29.95	Micro 4/3	to	Con/Yash	£29.95
Canon EOS-M	to	Nikon	£29.95	4/3	to	M42	£17.95
Canon EOS-M	to	Canon FD	£29.95	4/3	to	Con/Yash	£22.95
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Fuji X	to	Canon EOS	£29.95	Pentax	to	Sony Alpha	£44.95
Fuji X	to	Olympus OM	£29.95	Pentax	to	Canon FD	£44.95
Fuji X	to	4/3	£29.95	Sony Alpha	to	M42	£15.95
Fuji X	to	Canon FD	£29.95	Sony Alpha	to	Minolta MD	£44.95
Fuji X	to	Con/Yash	£29.95	Sony Alpha	to	Nikon	£44.95
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Nikon	to	Canon FD	£44.95	Sony Alpha	to	Canon FD	£44.95
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Nikon 1	to	Leica M	£39.95	Sony NEX	to	Leica R	£29.95
Nikon 1	to	Leica R	£37.95	Sony NEX	to	Canon FD	£42.95
Nikon 1	to	Con/Yash	£23.95	Sony NEX	to	M39	£23.95
Micro 4/3	to	Canon EOS	£29.95	Sony NEX	to	M42	£23.95

*with aperture control

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Lee Seven5

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Little Stopper	£68.00
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Lee SW150

SW150 Mark II Holder	£150.00
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Tokina 16-28mm Adaptor	£90.00

more adaptors online

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Microfiber Cloths	from £1.50
Lens Pen	£4.95
Cleaning Solution	£4.95
Circular Filter Pouch	£5.95
Square Filter Wallet	£9.95
Square Filter Case	£1.95

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Body Caps	£3.50
Rear Lens Caps	£3.50
Petal Hoods	from £10.95
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Angled Shutter Release Bracket	£24.95

Self Take Kits

DSLR Kit	£34.95
Compact Kit	£24.95
Angled Kit	£34.95
12" Vinyl Cable	£7.50
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EZ Comfort Strap	£9.99
Gotcha Wrist Strap	£9.99
Tripod Strap	£19.99
Utility Strap - Sling	£19.99

Olloclip (NEW!)

Olloclip 4-IN-1 Photo lens for iPhone 5/5s	£59.95
Olloclip 4-IN-1 Photo lens for iPhone 6 & 6 Plus	£69.95

Find many more fantastic products at our online store: www.SRB-Photographic.co.uk

KNOW-HOW

Can my camera bag be fixed?

Q The zip pullers on my backpack started to fray a few months ago, and to my horror one broke completely while shooting in the Lake District last weekend. I'd hate to see the bag go to waste as it cost me a small fortune. It's in good working order apart from the lost zip puller, so do you know of a way to save it?
James Cook

DAN SAYS Professional camera bags can be pricey, so it can be heartbreaking when you have to decommission one. Zip pullers see heavy use so it's no surprise that they're usually the first component to go, but they can easily be replaced. Army-grade paracord is an ideal solution – it's similar to the original cord on your bag and is the stuff used to secure parachutes to skydivers so it's pretty strong! It's very affordable too, at around £3 for 10m – so you can replace all your zip pullers for next to nothing!

It's not just as simple as just looping the cord through the hole though, as when you cut the cord you'll see that it's made from several layers. This makes it difficult to thread and means it'll fray quickly. Follow the steps below to do it the right way and maximise the longevity of your new pullers...

Paracord is an inexpensive way of replacing broken zip pullers and can put your favourite bag back in action.

Can I find out the settings I used to take my images?

Q I own a Nikon D5100 and shoot in JPEG format. I took some shots at the weekend and I think my settings were just right with a good amount of sharpness. However, I can't remember which settings I used. Is there any way to find out?
Kirsty Smith

MATTY SAYS The images hold your exposure info. In Photoshop or Elements, go to **File→File Info** to access the metadata. In the **Camera Data** tab you'll be able to find all of the camera's settings including the Shutter speed, Aperture, ISO, camera and lens attached.

HOW TO REPAIR BROKEN ZIP PULLERS

Thread cord through the zip

1 Cut off a generous length of paracord, around 30cm, with a sharp pair of scissors – this makes it really easy to tie it off with a knot later on. Wrap a small amount of tape tightly around each end to stop it from fraying as you push it through. Now thread the cord through the slider part of the zipper.

Tie a knot in the cord

2 Adjust the cord loop so both ends are even and parallel, and then tie them together with a simple overhand knot. Pull the cord really tight to make the knot secure, then trim off the excess and the taped ends. Leave loose ends about 1cm long after the knot.

Tidy up the ends

3 Paracord is synthetic so it melts like plastic. Taking care not to burn your hands or your bag, play the flame of a lighter over the ends of the cord to seal it. If it catches, blow out the flame, then quickly wet your fingers and form it into shape as though you're snuffing out a candle.

KNOW-HOW

Why is my shot soft?

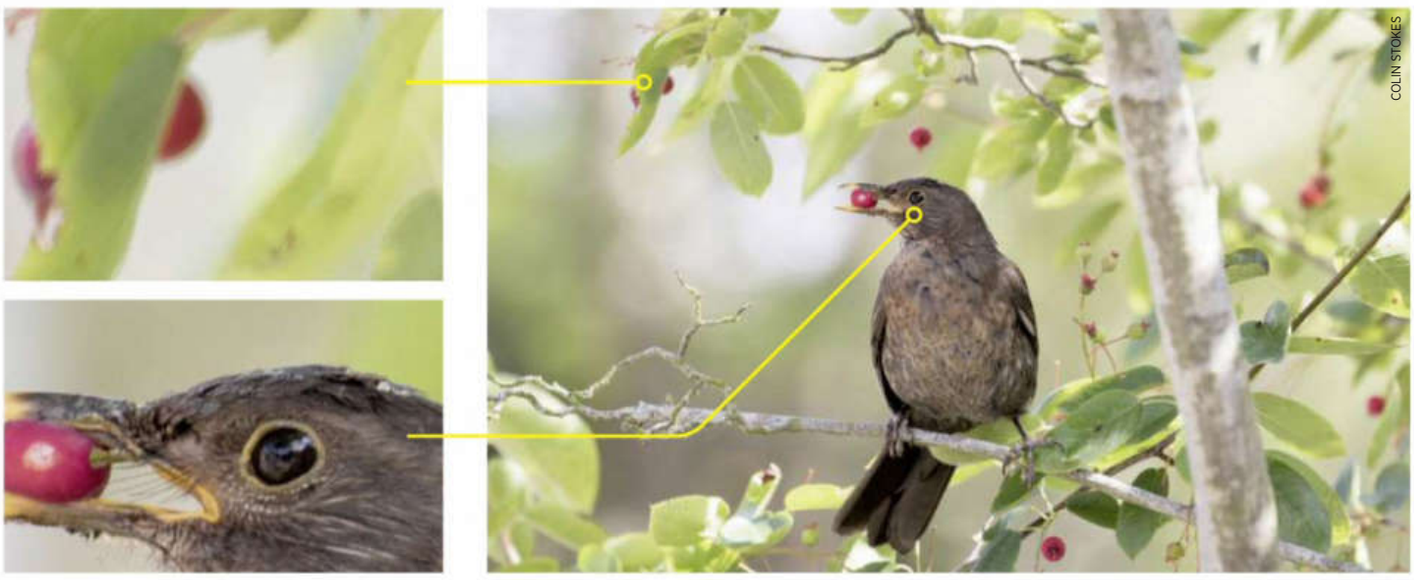
Q My images of birds sometimes look a little 'waxy'. I thought this was because I was cropping in heavily and they were interpolated, but I recently managed to fill a much larger portion of my frame with a blackbird. On close inspection it was a little waxy too. Is my gear faulty?
Colin Stokes

DAN SAYS Images can look 'waxy' when a high ISO is used or when applying a huge crop that's interpolated (digitally enlarged) by software. But neither of these factors affect your blackbird image as you've captured it at a low ISO and filled a large area of the frame with it. So what's up? Well, this shot is a little soft rather than waxy. A waxy appearance occurs when colours and detail are smoothed out by high levels of Noise Reduction. The detail in your shot is slightly soft and this is more likely due to camera shake from handholding the camera. The vibrations from our hands transfer to the camera when handholding and this softens detail. It's more apparent in the leaves at the top left of your shot, and is more subtle on the bird.

To get a sharp shot when handholding your camera, you need to make sure the shutter speed is equal to or greater than the reciprocal of your focal length. For example, if you're shooting at 200mm, you'll need a shutter speed of 1/200sec or faster to eliminate camera shake. However, this will not stop subject blur from occurring if your subject is moving. Camera shake has crept into your Blackbird shot because a shutter speed of 1/125sec was used with the zoom set to 400mm. You did the right thing by opening the aperture to its widest value of f/5.6, but to boost the shutter speed further (1/400sec is required for 400mm) you need to increase the ISO value too. One of the reasons f/2.8 telephoto lenses are so expensive is because they allow you to shoot at these faster shutter speeds without raising the ISO. This means you get less digital Noise in addition to a more attractive, shallow depth-of-field.

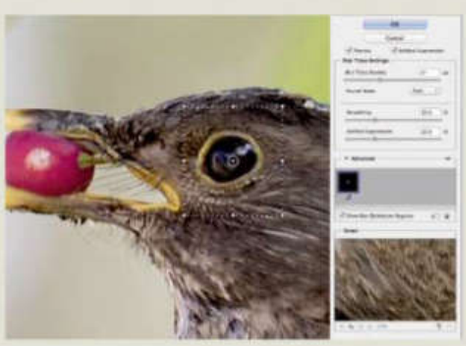
Your gear is likely to be in good working order, but to check if there are any problems, set up your camera on a tripod, use a 2secs Self-timer and shoot a stationary subject like a brick wall. If the area you focused on is pin-sharp then you know it's working properly. But if it's soft here, then your lens may not be focusing accurately. You'll need to get your lens serviced or tweak the in-camera focus settings to correct this.

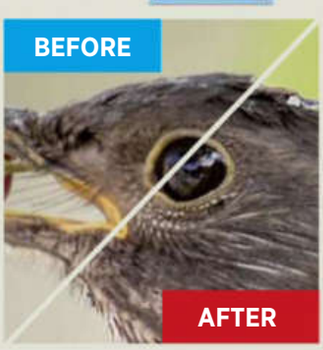
For shots suffering from a hint of camera shake, the Shake Reduction filter in Photoshop CC offers a good cure (see below).


COLIN STOKES

Using Photoshop's Shake Reduction filter

The Shake Reduction filter in Photoshop CC is effective at reducing camera shake. To use it, go to **Filter→Sharpen→ Shake Reduction**, and Photoshop will automatically draw a Selection over an area of the shot and scan it for camera shake. Resize this area by pulling the corner handles around the box and position it over the specific area you want to sharpen. Experiment with the **Blur Trace Bounds** slider to get your shot looking sharp, then increase the **Smoothing** and **Artifact Suppression** sliders to reduce digital Noise. Click **OK** to apply it.





BUYING ADVICE

Should I upgrade to full-frame?

Q I'm retiring this year and want to spend more time on my photography. I live in the Lake District so landscape and nature subjects are on my doorstep. I currently have a Canon 450D DSLR with 18-50mm f/2.8, 10-20mm and 55-250mm telephoto lenses.

I would like to upgrade my camera but should I go for a full-frame body or a new APS-C one?
Edward Holt

JON SAYS The lenses you have for your 450D are all designed for the smaller APS-C sensor, so these won't work on a full-frame camera. If you go down the full-frame route you'll have to replace them all with lenses designed for full-frame use.

At £1139, Canon's EOS 6D is the most affordable full-frame body. But with high quality lenses like a 24-70mm f/2.8L II USM (£1400), 16-35mm f/4L IS USM (£721) and 70-200mm f/2.8L IS II USM (£1499) you're looking at just shy of £5000 for a range similar to what you have.

Canon's 20Mp 7D Mk II costs £1299 body-only and offers a fast 10fps burst rate. Alternatively there's the 24Mp EOS 760D for £649 if you're happy with a slightly less rugged build. Either will give better quality than your 450D, as the sensors have more pixels and produce lower levels of Noise.

The main benefit of full-frame cameras is low-light performance – the pixels have larger photosites so you get less digital Noise. But, APS-C models are still excellent at lower ISO values. If you want to splash out, a 6D with a bagful of shiny lenses will do you proud, but if your budget's more modest, a new APS-C body may be more prudent.

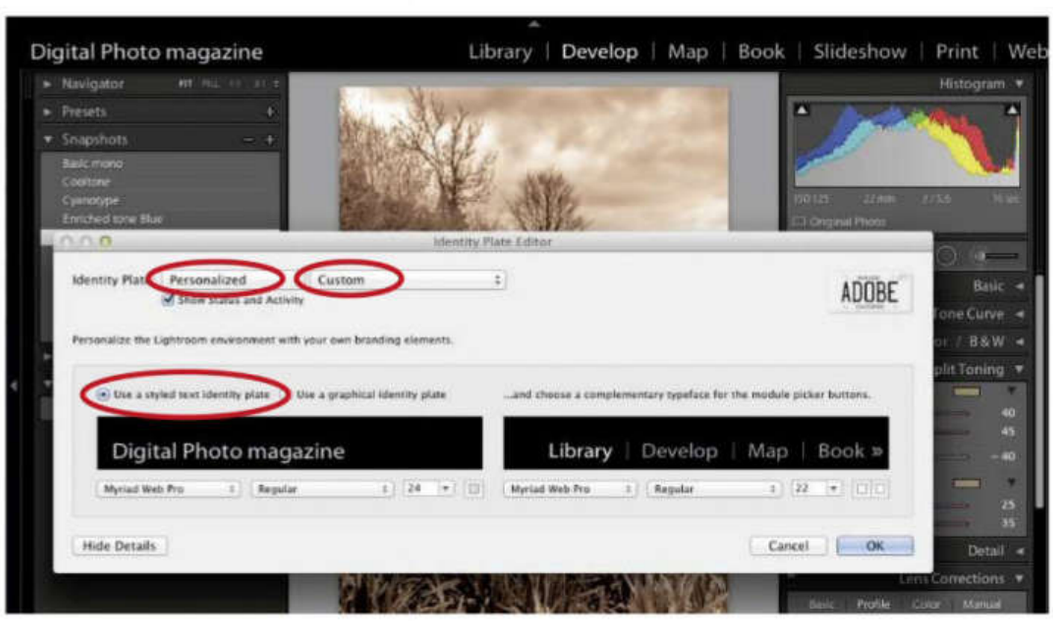
Full-frame DSLRs like Canon's 6D can't be used with lenses designed for APS-C sensors.

LIGHTROOM

How do I customise my LR?

Q I enjoyed your Lightroom black & white guide in the September issue but I noticed that in your video lessons, you had 'Digital Photo magazine' at the top left of the interface. Do you have a special version of the software, or can I change it in the version I have?
Alison Adams

ANDY SAYS Throughout the magazine, we use standard software that's readily available to everyone. We used Lightroom 5 in the video lessons for our black & white special and the plate in the top-left corner of the interface can be customised. To change it, hover the cursor over the identity plate and you'll see a downward-facing arrow to the right. Click on this and select **Change Identity Plate** from the drop-down list. In the dialogue box, select **Personalized** and **Custom**, and then click the **'Use a styled text identity plate'** option. Type your text in, choose your font, style and size in the boxes below, and when you click **OK**, you'll have your own custom Lightroom too!



Can I edit my in-camera HDR?

Q I used to take a lot of in-camera HDRs but I've recently shot RAW instead. Is there a way I can turn my old HDRs into RAW files?
Mike Webster

DAN SAYS In-camera HDR modes only shoot in JPEG format and process the files immediately, locking the data into a single, HDR JPEG. Sadly, this means you can't revert the shots back to RAW or even to the separate JPEG files. It's one more reason to shoot in RAW format (or RAW+JPEG mode if you're not quite sure!).

High Dynamic Range pics have a deep range of tones.

Why can I see a checkered pattern in Photoshop?

Q In Photoshop some of my image has a chequered pattern on it. What is this?
Will Taylor

ANDY SAYS A chequerboard pattern is Photoshop's way of telling you that part of the image is transparent. This is particularly useful when Erasing different Layers as it shows you the parts you've erased. If you can see the chequerboard you've most likely switched a Layer off or deleted your **Background** Layer. Go to the Layers palette (**Window→ Layers**) and make sure all of your Layers are visible – they'll have an eye icon next to them if they are.

Take your pictures even further!

The latest issue features 132 pages of inspiration and expert advice, plus a free CD-ROM packed with over 43 minutes of the best hands-on camera and editing lessons.

Free! LCD screen protector for all DSLRs, CSCs and compact cameras*

*Available in selected grocery stores

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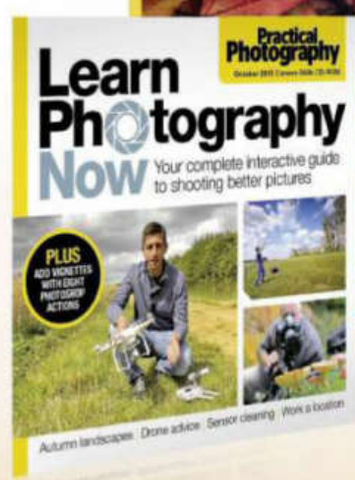

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DIGITAL PHOTO

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Phone 01733 468546
Editor Jon Adams
Art Editor Andrew Beswick
Production Editor Marie Marsh
Assistant Editor Matty Graham
Technical Editor Dan Mold
Technical Writer Andy Heather
Editorial Assistant Emily Thorpe
Contributors Gavin Hoey, Ben Davis, Peter James

ADVERTISING
Phone 01733 395013
Email *simone.daws@bauermedia.co.uk*
Group Commercial Director Charlie Brookes
Group Sales Manager Iain Grundy
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MARKETING
Phone 01733 468329
Brand Manager Charlotte Walsh
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Head of Newstrade Marketing Leon Benoiton
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PRODUCTION
Phone 01733 468341
Print Production Manager Lucinda Westwood
Production Manager Colin Robinson
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DIGITAL PHOTO

Expert verdicts you can trust on the latest cameras & kit

GEAR FOCUS

Fujifilm's keenly priced X-T10 CSC on the test bench p126

NIKON LAUNCHES A TRIO OF NEW LENSES

Two Nikkor zooms and a wide-angle prime p112

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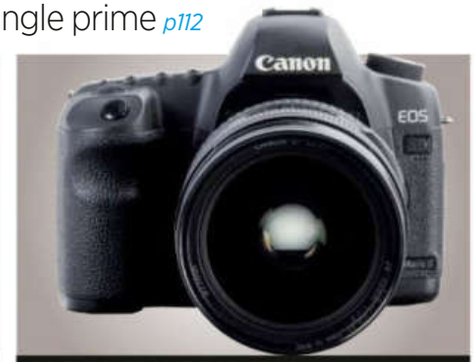

GO FULL-FRAME FOR £500

Second-hand bargain buys p114

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Why you can trust our reviews & verdicts

Technical editor Dan Mold oversees rigorous tests in the field and the studio, and after years advising on gear and technique in photographic retail has an unrivalled eye for what photographers want. All reviews are thorough, unbiased and objective.

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200-500MM F/5.6E ED VR

24-70MM F/2.8 ED VR

DSLR LENSES

Nikon launches a trio of lenses

LAST MONTH NIKON RELEASED the behemoth 500mm and 600mm f/4E telephoto lenses. This month, the firm has expanded the Nikkor range even more with three FX format (full-frame) optics.

The 24-70mm f/2.8E ED VR builds on its predecessor, enhancing its already substantial build and image quality. It's the first Nikkor lens to include an aspherical ED element to combat fringeing and increase clarity at the frame edges. Vibration Reduction (VR) is on board too, boasting a 4-stop advantage for sharper shots at slower shutter speeds. The Silent Wave Motor (SWM) has also been retuned, claiming an autofocus performance up to 1.5x faster then the prior model.

Announced last year, Nikon's 20mm f/1.8 struck a chord with fans of low-light photography. Building on its success, Nikon's latest 24mm f/1.8G gives a tighter angle-of-view, can focus just 23cm away, houses 12 elements in nine groups and employs a Nano Crystal Coat to reduce internal reflections. It's worth noting that the 24mm f/1.8 undercuts the 20mm f/1.8 by £20 and is less than half the price of its Nikkor 24mm f/1.4 sibling.

The third and final lens announced is a telephoto zoom. The range of the 200-500mm f/5.6E ED VR is suitable for wildlife and sports photography. It contains 19 elements in 12 groups, three of which are of the ED variety to combat chromatic aberration. The latest generation of Nikon's VR system has been weaved in too, and is said to render sharp shots when shooting 4.5-stops slower than the norm.

The Nikkor 24-70mm f/2.8E ED VR will be available from October with an RRP of £1849.99. Release dates for the remaining two optics are yet to be announced, but the 24mm f/1.8G will cost £629.99, and the 200-500mm f/5.6E ED VR will be £1179.99.

▶ *www.nikon.co.uk*

DSLR LENS

New travel zoom from Tamron

Tamron has announced the 18-200mm f/3.5-6.3 Di II VC, the successor to one of the firm's best-selling lenses – the 10-year-old 18-200mm f/3.5-6.3 XR Di II LD. The new lens has been hugely anticipated and comes packed with more features than ever. One is a new comprehensive Vibration Compensation (VC) system which moves the glass elements inside the lens to reduce vibrations when hand-holding.

The 18-200mm packs in 16 elements in 14 groups but weighs a sprightly 400g. With its lightweight build and large 11x optical zoom it's geared up to be a fantastic travel lens. It's been designed for DSLRs with a cropped sensor so has a film equivalent of 27-300mm on Nikon or Sony bodies. This becomes 28.8-320mm on a Canon APS-C with the longer 1.6x sensor crop. The 18mm end is ideal for wide-spanning landscapes while the long end brings distant details and wildlife into view.

Tamron say the circular, seven-bladed aperture diaphragm remains almost perfectly round even when it's closed down by two stops, giving a more natural looking bokeh shape to out-of-focus highlights.

Tamron's 18-200mm has a massive 11x optical zoom.

The travel zoom has a maximum reproduction ratio of 1:4 with a minimum focusing distance of 49cm for close-up shots.

Tamron's 18-200mm f/3.5-6.3 Di II VC is available to purchase now with an RRP of £169.99.

▶ *www.tamron.eu*

CAMERA BAGS

LOWEPRO GET ACTIVE

LOWEPRO HAS LAUNCHED the Whistler and Photo Sport II outdoor photography backpacks. The Whistler is available in two sizes – the 350 AW and 450 AW. It's been designed to carry an equal amount of photographic and outdoor equipment. On the back you'll find a hinged back panel to access to your camera gear. They're made from a waterproof fabric and also include a detachable All Weather (AW) Cover.

The Photo Sport 200 AW II and 300 AW II backpacks allow users to carry camera gear while carrying out activities such as climbing or cycling. Both have an UltraCinch design with side access. The bag can be tuned to your build using the ActivZone harness system and adjustable shoulder straps.

Available to buy now, the Whistler BP 350 AW and 450 AW have an RRP of £257 and £286 respectively, while the Photo Sport BP 200 AW and 300 AW will set you back £118 and £147 each.

▶ *www.lowepro.co.uk*

Lowepro's latest bags are aimed at outdoor photographers.

TRIPODS

290 tripods refreshed

Manfrotto has refreshed its mid-range 290 series with the arrival of the 290 Xtra, 290 Dual and 290 Monopod. The 290 Xtra comes in carbon fibre – tipping the scales at 1.5kg, or aluminium – weighing 1.8kg. Both can support the same maximum payload of up to 5kg. The 290 Xtra tripods have legs constructed from three sections and offer four leg angles for achieving different shooting setups.

The 290 Dual is an aluminium tripod with a 90° centre column, similar to the one found in the higher-end 190 series. It allows the centre column to be positioned horizontally for easier low-to-the-ground shooting. Like the Xtra, the Dual models sport three-section legs which can be set to four different angles.

The 290 Carbon Monopod offers a maximum load of 5kg, extends to 151cm and collapses to 49cm.

Available to buy now, the 290 Xtra costs £99.95 and £194.95 for the aluminium and carbon sticks respectively. The 290 Dual will set you back £129.95 for the legs only and the Carbon Monopod retails for £69.95.

▶ *manfrotto.co.uk*

Manfrotto's latest 290 Dual has a centre column which can be rotated by 90°.

TRIPODS

Gitzo reveals slimmest ever Traveler tripod

Gitzo's range of Traveler tripods has been expanded and the latest models feature a tighter carbon fibre weave. The new Carbon Exact tubes allow the thinnest leg sections to be sturdier, up to 40% larger than on prior models.

The five section Series 0 GT0545T is the most portable tripod Gitzo make. The GT1555T and GT1545T are 5 and 4 section tripods belonging to the Series 1 range, while the Series 2 GT2545T is the tallest of the bunch at 154.5cm.

The Traveler tripods start at £559.95 and come bundled with a carrying bag and short centre column for low shooting. All models are available now.

▶ *www.gitzo.co.uk*

NEWSBYTES

New Booq bags

Booq has launched the Python Catch – a toploading shoulder bag for the photographer on the go. It's designed to be slim and comfortable and holds everything you need to shoot and edit on the spot – two DSLRs, four lenses and a laptop. It's out now with a price of £220.

▶ *www.booqbags.com*

Colourful hard drives from WD

Western Digital has redesigned the My Passport Ultra hard drives. Available in capacities up to 3TB and four colours, the drives can be personalised with an extra WD Grip Pack to put a protective band around the edge. Prices for the My Passport Ultra drives start at £59.99 and the WD Grip Pack costs £9.99. They're available to buy now.

▶ *www.wdc.com*

Samyang launch video primes

Samyang has announced three video prime lenses. The 24mm, 50mm and 85mm Xeen lenses are said to deliver outstanding image quality and share a T1.5 aperture. They're available now in Canon, Nikon, Sony E, MFT and PL mounts, costing £1600 a piece. ▶ *www.samyang.co.uk*

Go full frame for £500

Want to step up to a pro-level camera but worried about the cost? Buy second-hand and you could bag a bargain...

WORDS BY MATTY GRAHAM

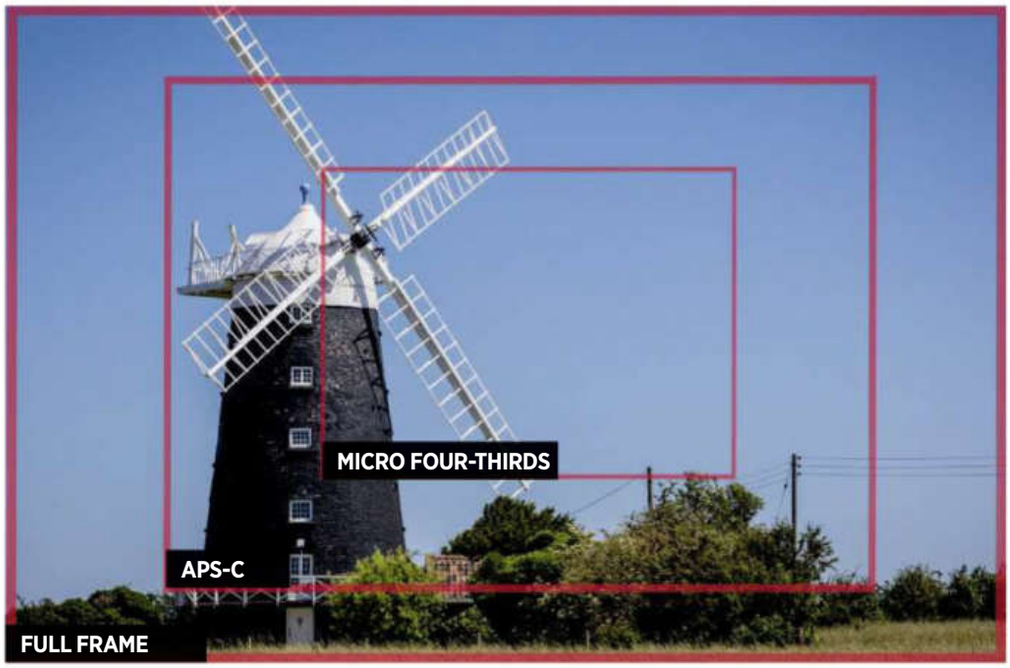
TECHNOLOGY MOVES FAST IN THE DIGITAL world and new cameras are released more regularly than ever. This is great news for those seeking good value, because as a consequence of all the latest additions, the value of older DSLRs falls. While you may save a modest amount on last year's enthusiast cameras, the real savings are to be had with older, pro-level, full-frame DSLRs, which are now hundreds of pounds more affordable than they were when launched. For example, the Canon EOS 5D MkII would set you back £2200 in 2008, but today you can buy a well-looked-after example for just £500 – less than a quarter of its original price.

With such excellent savings to be had, photographers now face a dilemma. Do you purchase a brand new enthusiast camera with fewer features and a smaller sensor, or plunge into the second-hand market and pay the same money for an older, professional full-frame body?

Of course, there are benefits and drawbacks to used gear. A pro body will not only boast a big sensor, but will also feature superior build quality, weather-proofing, a fast frame rate and a quick AF system. But like buying a used car, your pro body will have its own history and unless you do your homework, you could make the mistake of shelling out on a DSLR that's seen too much abuse.

Here, we'll outline the info you need to save you from a buying blunder. We'll show you what to look out for when buying second-hand, and we'll share our top recommendations. If you're after the benefits of full-frame, find out how you can do it for a lot less cash...

What's special about full-frame cameras



Full-frame is the term given to DSLR image sensors which measure the same size as a frame of 35mm film (36x24mm). Ignoring big-money medium format cameras, full-frame is the largest sensor size available on a DSLR. Most enthusiast cameras feature an APS-C size sensor. These are more affordable and dimensions vary, but they're around half the size at roughly 24x16mm. Some Compact System Cameras and the vast majority of bridge/compact cameras have even smaller sensors.

When used with a full-frame camera, lenses give their true focal length, but cameras with smaller sensors all have a crop factor, which effectively increases the focal length of whichever lens you have fitted.

This means full-frame cameras capture more of a scene, but the larger sensor also offers bigger photosites. These gather more light and produce cleaner, better quality images with lower levels of Noise.

A second-hand full-frame camera gives you pro-quality handling and top class results. And it needn't cost the earth!

Older full-frame DSLRs that boast better build quality and faster AF systems can be bought for £500

Searching for your first full-frame DSLR? Here's what to look for

JUST LIKE KICKING THE TYRES, CHECKING the mileometer and examining the paintwork when eyeing up a used car, there's a few things to look out for if you're about to splash the cash on a used full-frame model. While it may take a bit of time for this extra investigation, in the long run it will save you from making a mistake and ending up with an unfit camera.

To help speed up the process and ensure you don't miss a thing, here are the most important checks to make and elements to look out for before opening your wallet...

Nikon D700, boxed and in excellent condition. 27,052 shutter actuations. Comes supplied with 6 x 16GB SanDisk Extreme IV CF cards, Nikon battery grip, SanDisk card reader, Nikon remote trigger & kit lens. Inspection welcome.

GOOD ADVERT
With a low shutter count, original manual and extra accessories (including a branded battery grip) included in the price, this is the sort of buy you should be looking out for if you choose to purchase via the small ads. Plus, the seller is keen to allow inspections, so you can try before you buy.

Canon EOS 5D MkII, no box or owner's manual, body-only. The shutter count is 98,131. Always reliable but hotshoe bracket is slightly bent and grip has peeled off in places. Supplied with a third party battery. Selling for a friend. No returns.

BAD ADVERT
A high shutter count is a bad start, but this ad gets worse when you discover there are faults with the camera that could indicate it's been dropped. An unknown third-party battery is also to be avoided but worse still is the dodgy nature of the seller acting on behalf of a friend. Walk away from this one!

EXTERIOR GRIP
Most DSLRs have a rubber-textured material on the exterior of the camera – particularly around the handgrip. Over time this material can discolour, or worse still, peel off. This could affect your ability to hold the camera securely so make sure it's sound.

SENSOR
A telltale sign of a considerately-owned camera is a clean sensor, as this shows the photographer cared enough about image quality to regularly clean it. Some stores will clean the sensor before posting you the camera.

HOTSHOE
Although made of metal, hotshoe mounts can malfunction if they are treated roughly. If there's impact damage to the mount, flashguns or triggers won't be able to slide in and be used properly, so make sure it's in good condition and not bent out of shape.

Taking time for extra checks will save you money in the long run

POP UP FLASH
The integral pop-up flash mechanism on cameras can go wrong, locking the flash in the closed position. Most pro-level cameras don't feature a pop-up flash at all, but if the camera you're looking to buy does have this feature, make sure it works.

LCD SCREEN AND TOP-PLATE
The obvious checks here are to look out for scratches or, worse still, cracks on the LCD and top-plate. If you can get hands-on with the camera, take a shot and then review it on the screen. This will give you the opportunity to see if the screen is washed out and has lost its vibrancy.

ACCESSORIES
While this isn't necessarily to do with the camera, the accessories that come with the DSLR can affect its value. Cameras that come with the original box, strap and charger fetch more money. Avoid cameras with cheap, unbranded batteries. You don't know where they've come from.

LENS CONTACTS

The contacts near the lens mount enable the camera to communicate with the lens. Replacing them is a big job, so ensure there is no obvious damage or corrosion to the gold contacts. If there is, walk away.

SHUTTER COUNT

Much like the mileage on a car, you should be looking for a used camera that has a low amount of actuations. An actuation is one click of the shutter. Most cameras have shutters built to fire a minimum of 150,000 actuations. Many reputable dealers will list the actuations on the camera's information, but if you're buying from a private source ask them to take a picture of today's paper and email it to you. You can then run the image through software like ShutterCount40D, which is downloaded for free from the internet and this will reveal the camera's true number of actuations.

BATTERY COMPARTMENT

Often one of the more vulnerable elements of the camera is the battery compartment slot. Make sure the hinge is in full working order and look out for any duct tape that may indicate damage.

TRIPOD SOCKET

Pros use tripods a lot, so you'll see wear in this area on a well-used camera. If there's a low shutter count and a pristine tripod bush, the camera has likely had gentle amateur use, so may be a bargain.

Want to get a full-frame DSLR cheap? Here's where to bag a bargain

You can buy second-hand cameras from a host of different places, and in a nutshell, the more risk you take on, the lower the price is likely to be. Outlined below are the most common ways to buy pre-loved photo kit, and the things you need to look out before handing over your hard-earned cash.

CAMERA DEALERS

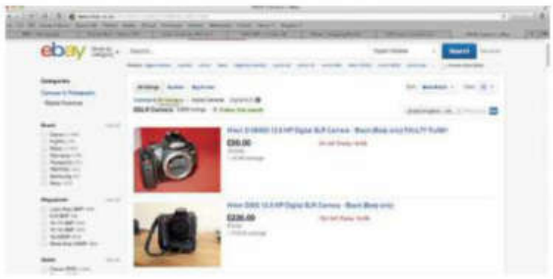
Big camera shops such as WEX, Park Cameras, London Camera Exchange, Mifsuds and Camera Jungle are alert to the second-hand market and offer used kit alongside new cameras on their websites. You may pay a little more compared to a private sale, but reputable dealers offers benefits you won't get when handing over a roll of notes to some bloke in a pub car park!

For example, WEX show pictures of the actual camera you are buying – not just stock images of how it looked when new. What's more, they grade the equipment, share the shutter count, describe the condition and list any issues that might be missed when simply looking at the pics (like scratches, small dents, etc).

Another reason to buy second-hand through dealers rather than private channels is you'll usually get a warranty. This won't last as long as with a new camera, but it means you can return it if you're not satisfied when it arrives, or if it goes wrong within the stated period. Some dealers also offer part-exchange on your existing gear, so you could cash this in as part of the deal.

AUCTION SITES

Auction sites like eBay are a popular source as many photographers sell off their used gear to invest in newer kit. However, important steps must be taken to make sure you don't end up buying a camera you aren't happy with. Check the feedback rating of the seller and if it's low, don't bid. See how



much the camera is worth by looking at similar listings, set your maximum price accordingly, and don't bid above it.

Ask ALL the questions you have about the camera via the 'contact seller' element of the site (this creates a paper trail in case the camera is not as described), and make sure you're satisfied with the answers. Use PayPal to buy, as this offers greater protection to recover your money should the product not match the description. Big auction sites offer lots of protection to buyers, but that doesn't mean you should be complacent. If you sense something's not right about the item or the seller, trust your instinct and don't bid, however tempting the price may be.

CAMERA FAIRS

If you've never been to a camera fair before, you're in for a treat! Essentially, they're like a big bring-and-buy sale where photography enthusiasts lay out their used gear on a stall and invite offers. These fairs happen up and down the country so you won't have to travel far to find one near you. Just type 'Camera Fair' into Google or visit *www.nanites.co.uk*.

The big advantage of camera fairs is that you can touch and try the gear, visually inspecting it until you are happy to make an offer. Plus, with the seller on hand, you can ask as many questions as you want. The custom at camera fairs is to haggle, so depending on your bartering skills, you may get a real bargain. Do your homework first though, as it's daft to pay more than the kit would cost you at a proper camera store.

Three groundbreaking full-frame

Here's our pick of the best full-frame buys...

Canon EOS 5D MkII £450-£600

What's special? The 5D MkII was the first full-frame camera to offer Full HD video and was quickly adopted by film-makers (TV series and feature films have been shot on it). Movies aside, the 5D MkII is still an excellent choice for landscape, portrait and wedding shooters with the full-frame 21Mp sensor delivering high quality files. The body is weather-resistant and the shutter life expectancy was rated at 150,000.

Also consider: Good examples of the original 12.8Mp EOS 5D can still be found on the second-hand market, with an average asking price around £300.

The EOS 5D MkII was quickly adopted by film-makers

The 5D MkII features a robust all-alloy body design.

Nikon D700 £450-£600

What's special? The D700 gave Nikon shooters all the best bits of the fully-pro D3 model in a more affordable package. The D700's 12Mp sensor offered a leap forward in Noise control and produced clean images with low levels of Noise at high ISO values. It also boasted pro-quality weather sealing so you could keep shooting in a shower. The EXPEED processor enabled 17 RAW files and more than 100 JPEGs to be captured before the buffer filled and both Live View and artificial horizon features are integrated to make composition easier. No video mode is offered though, so it's for stills use only.

Also consider: The D600 was only launched in 2012 and used models sell from £650. With 24Mp, the full-frame camera used the same EXPEED 3 processor as the higher-spec D800.

The D700 offered a leap forward in Noise control

Seventeen RAW files and more than 100 JPEGs can be captured before the D700's buffer fills up.

Sony A900 £450-£600

What's special? The A900 was Sony's first full-frame DSLR and offered impressive specs at the time of its launch in 2008. With a 24Mp sensor, Sony outgunned Canon and Nikon in the resolution battle and it still offers a decent pixel count seven years on. The A900 even featured sensor-shift stabilisation technology and can accept Memory Stick Duo cards, which are cheaper than ever these days as Sony has since discontinued the format.

Also consider: The full-frame A850 was released in 2009. Good examples are quite rare, but are generally cheaper than the A900 at around £400 and have a similar spec – the only notable differences are a slower frame rate and a smaller viewfinder coverage.

24Mp is still a decent pixel count – even seven years on

Used A900s are rare but, if you look hard enough, you'll find a good example.

cameras – going cheap!

Seventy-eight JPEGs or 13 RAW files can be captured before the buffer fills.

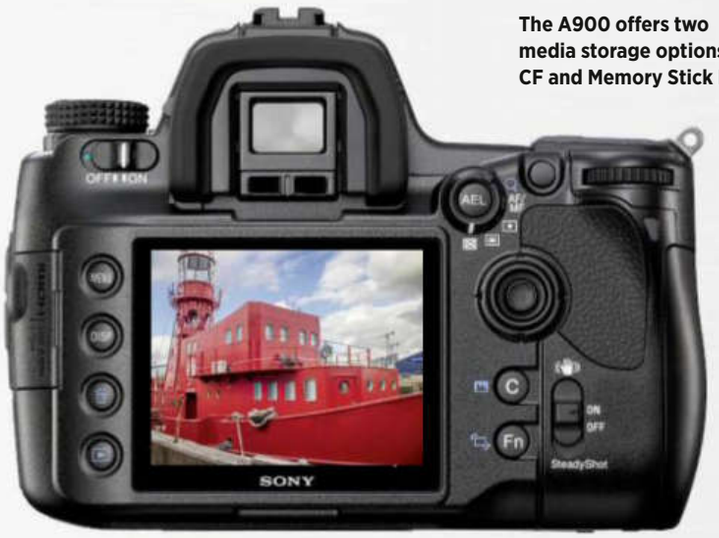
Quickspec

Canon EOS 5D MkII
Price when new: £2200
Price now: £500
Megapixels: 21.1
Processor: DIGIC 4
Lens mount: EF
Burst rate: 3.9 FPS
AF points: 9
ISO range: 100-6400 (expandable to 25600)
Shutter range: 30-1/8000sec
LCD: 3-inch 920k-dot resolution
Flash: No
Live View: Yes
Video: Full HD (1080p at 30fps)
Storage: CF card
Dimensions: 152x113.5x75mm
Weight: 810g (body only)
Visit: *www.canon.co.uk*

The D700's sturdy magnesium alloy body can handle the knocks of everyday use.

Quickspec

Nikon D700
Price when new: £1900
Price now: £500
Megapixels: 12.1
Processor: EXPEED 3
Lens mount: Nikon F
Burst rate: 5.1fps
AF points: 51
ISO range: 200-6400 (expandable to 25600)
Shutter range: 30-1/8000sec
LCD: 3-inch 920k-dot resolution
Flash: Yes
Live View: Yes
Video: No
Storage: CF card
Dimensions: 147x123.5x77mm
Weight: 995g (body only)
Visit: *www.nikon.co.uk*



The A900 offers two media storage options – CF and Memory Stick Duo.

Quickspec

Nikon Sony A900
Price when new: £1900
Price now: £500
Megapixels: 24.6
Processor: Bionz
Lens mount: Sony A Mount
Burst rate: 5fps
AF points: 9
ISO range: 200-3200 (100-6400 expanded)
Shutter range: 30-1/8000sec
LCD: 3-inch 920k-dot resolution
Flash: No
Live View: No
Video: No
Storage: CF card/Memory Stick Duo
Dimensions: 156x116.9x81.9mm
Weight: 850g (body only)
Visit: *www.sony.co.uk*

PENTAX K3 II / ENTHUSIAST DSLR / £769 BODY-ONLY

SHOOTING STARS

Pentax's new flagship K-3 II has weather-sealing, stabilisation and a GPS unit for star shots

TEST BY DAN MOLD

WOULDN'T IT BE GREAT if you could continue shooting even when the heavens open? If so, the K-3 II could be for you as it has 92 seals to keep the elements out. Interestingly, the Mk II isn't a replacement to the now two-year old K-3. Instead, it sits alongside it, offering different features and a slightly higher price tag.

The K-3 II looks remarkably similar to its sibling, however one big change is that it has no pop-up flash. This has been replaced by a GPS unit and can be used for star-filled night shots up to 5mins in duration or to geotag your images.

It also has sensor-based image stabilisation, so let's find out how it fares...

Features & Build

The large number of weather-seals protect the bounty of state-of-the-art features within the K-3 II. The 24Mp APS-C sensor has no Anti Alias filter so should provide extra sharpness. Its resolution is similar to Nikon's D5500 and Canon's 750D, capturing RAWs and JPEGs at 6016x4000px, and it can shoot in the universally friendly DNG RAW format. But, it's the built-in Shake Reduction system that makes the Mk II stand out from the crowd, with a 4.5 stop advantage.

Pentax has multi-purposed the motors that stabilise the sensor for even more features. They can vibrate to act as an AA simulator, rotate the sensor to track stars when used with the integrated GPS unit and pave the way for a brand new Pixel Shift Resolution mode. Despite its name though, this mode does not increase the resolution. When set up on a tripod, the K-3 II can take four separate shots, each one pixel apart, and stitch them together to give more accurate colours. A standard RAW was 34MB, but this was increased to 127MB when using this mode.

Borrowing the same Prime III image processor found in the £6,799 645Z medium format camera, the Mk II should be pretty quick off its feet. An ISO range of 100-51,200 is featured and the shutter speed spans from 1/8000-30secs, with the burst rate topping out at 8.3fps.

Look at the Mk II from above and you'll find the Mode dial with all the usual MASP exposure choices plus a few extra modes including Sv (an ISO priority mode) and three customisable User modes. The Mode dial spins freely but a pin lock can be engaged via a small lever.

Move to the right and you'll find the hotshoe above what looks suspiciously like a pop-up flash. While this was indeed a flash in the Mk I, it's been sealed shut with the new GPS unit in its place. A new Astrotracer feature uses the GPS to track stars for several minutes – this would cause star trails to appear in cameras without this ability. You can also use the GPS to Geotag your shots, adding location metadata to the image. A top plate LCD sits adjacent to this, and displays core exposure info.

The K-3 II's sensor is stabilised for sharp shots at shutter speeds 4.5 stops slower than usual

New feature Astrotracer

The K-3 II's SR motors can be used to move the sensor in accordance with the Earth's rotation. Both pics above took four minutes to expose, but the Astrotracer was activated for the shot on the right – so the stars appear as pin-points of light. The GPS needs to be calibrated before use by rotating the camera in three different planes, and one thing to note is that your foreground will become blurry – so this needs to be shot on a separate exposure and carefully composited in, as we did on the above pic.

The K-3 II has a stabilised 24Mp sensor and has 92 seals to protect it from rain.

Key features of the Pentax K-3 II

MODE DIAL
This has the standard Program, Manual, Aperture priority and Shutter priority modes in addition to an ISO priority and three custom User modes.

SHAKE REDUCTION
The 24Mp sensor is stabilised allowing users to get sharp shots at slower shutter speeds. An Anti Alias filter simulator can also be activated to cancel moiré imaging defects.

GPS UNIT
Instead of a pop-up flash, the K3 II has a GPS unit to keep the camera aligned when shooting star images and to tag pictures on Google Maps.

WEATHER-SEALING
A total of 92 weather seals keep the delicate electronics inside the K-3 II safe from harm, allowing you to confidently continue shooting when the heavens open.

Quickspec

Street price: £849 with 18-55mm f/3.5-5.6 AL WR lens (£769 body only)
Resolution: 24Mp (6016x4000px)
Format: JPEG & RAW (DNG or PEF)
Sensor: APS-C
ISO: 100-51,200
Shutter: 30-1/8,000sec & Bulb mode
AF system: TTL phase detection
Focusing modes: Manual Focus, Single AF, Continuous AF and Auto select AF
Metering: Multi-segment, centre-weighted and spot metering
Burst: 8.3fps
Monitor: 3.2in, 1037k dot LCD with Air Gapless technology
Viewfinder: OVF 100%
Pop-up flash: No **Hotshoe:** Yes
Video: Full HD 1920x1080 @ 30/25p
Write speeds: 1.7secs RAW, 0.7sec JPEG
Storage: SD, SDHC and SDXC
Weight: 785g (body only)
Dimensions: (WxHxD) 102.5x131.5x77.5mm
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Image quality Detail & lens

We tested the K-3 II with the 18-55mm WR kit lens. At the 18mm end we saw a small amount of barrel distortion and a visible amount of chromatic aberration in the corners throughout the aperture range. RAWs were much softer than its JPEGs and needed a good level of sharpening in software. The corners were soft when shooting at f/3.5 and sharpened up at f/5.6. At the 55mm end the chromatic aberration vanished and barrel distortion was replaced by a small amount of pin cushion distortion.

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The B-Glider is a camera strap for people who hate camera straps! This brilliant strap features a clever release system that delivers your camera straight into your hands. It's the same quick release system found on all other B-Grip products. B-Glider forms part of a unique, versatile and comfortable carrying system that suits your needs whatever the situation.

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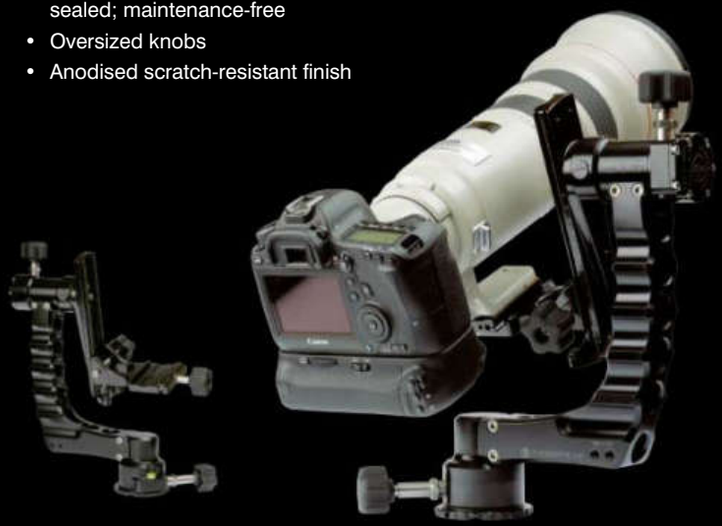
Katana 2 Gimbal Head

The Katana 2 Gimbal Head is a solid, precision built piece of equipment. It allows you effortless control over your heaviest telephoto lenses, smoothly tracking birds in flight or as a solid platform for panoramas.

- Smooth panning and tight locking mechanism
- Arca-compatible lens mount
- Deep groove ball bearings, sealed; maintenance-free
- Oversized knobs
- Anodised scratch-resistant finish



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A game-changing 2-in-1 slider

Truly a multipurpose slider. Mount it onto a tripod or two, accessorize if you wish, or bring it into play with the built-in leg support. Flip it over to use either the curved track or straight track.

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On the back sits the large, 3.2in LCD screen. It boasts a wide viewing angle, AR coating and Air-gapless technology to cut down reflections in bright sun. Compose with it and you'll be able to make use of its Safox 11 autofocus sensor module. There are 27 AF points to choose from, with the central 25 being the faster phase-detect type.

Performance & Handling

The K-3 II has a stainless steel chassis and magnesium alloy body, so it feels like it could take a real beating. Reinforcing the build are its all weather credentials, which will keep out heavy rain. It sports a rather angular grip however, and is quite heavy with a body weight of 785g. This makes it a little uncomfortable to use for prolonged periods.

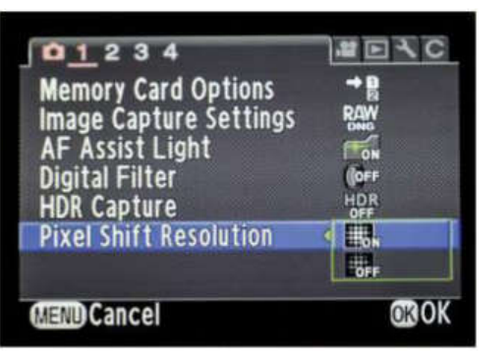
The studded rings on the 18-55mm WR lens give plenty to hold on to and look a little reminiscent of older film cameras. The kit lens is fully weather-sealed to match the body and features a zoom ring as well as a focusing ring for fast manual focusing. You can quickly change between AF and MF with a large switch on the body although this required a firm click to stop it getting stuck between modes.

The autofocus is carried out by the motor built in to the body. The attached 18-55mm AL WR kit lens was quick to focus but produced a drill-like whir which would be enough to scare off a skittish subject.

When compared to the slick interfaces found on its competitors, the Pentax K-3 II's menu system feels a little clunky and, at times, unintuitive. This is partly due to a high number of buttons on the outside which take time to locate. Some of these, such as the RAW/FX, GPS and Meter mode buttons, would be more logically situated if they were nested into the quick Info sub-menu.

A small red dot widely signifies the movie record function, and while this is the case with the K-3 II, it's only when the Capture Mode selector is flicked to Movie mode. In the Stills mode the same button engages Live View instead, which was a little confusing. That said, dual Command dials and a dedicated ISO button near the shutter release made it easy to tweak exposure parameters.

The K-3 II gave a steady performance when it came to writing files to the card. A single JPEG took 0.7sec but a RAW took a whole second longer at 1.7secs. Shooting at 8.3fps in the burst mode the K-3 II was able to shoot 60 JPEGs before slowing, and took 7.5secs to write them. In the same mode, 23 RAWs were taken, and these took 17secs to clear the buffer.



Using a tripod, you can use the K-3 II's Pixel Shift Resolution mode for more accurate colours.

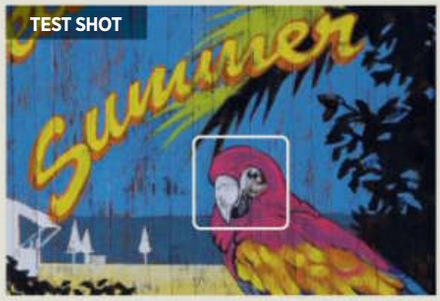


Image quality ISO, JPEG & RAW image test results

In-camera processing in the JPEGs revealed some Noise Reduction which softened details at higher ISO values. Details were strong in files up to ISO 400 and digital Noise was handled well and not really noticeable until the 1600 mark. The RAW files were untouched by Noise Reduction so details looked stronger. Digital Noise crept in at the 800 mark and at this setting it looked like a fine grain. This became much more apparent at settings of ISO 1600 and higher.

The K-3 II has a stainless steel chassis and magnesium alloy body, so it feels like it could take a real beating

Value for money

The K-3 II costs £849 with the 18-55mm f/3.5-5.6 AL WR lens or £769 body only. This puts it close to Nikon's older D7100 which has a street price of £748 body-only or £849 with the 18-105mm VR kit lens. Canon's 70D costs £760 with the 18-55mm IS STM kit lens. Both competitors are out-specced by the K-3 II's GPS, sensor-shift stabilisation, 25 cross-type AF points and weather-sealing, but they do offer a friendlier interface which makes it easier to adjust your shooting setup.

DIGITAL PHOTO THE VERDICT

Pentax has really pulled out all the stops with the K-3 II. It really is loaded with some fantastic technology. The stabilised sensor, 25 cross-type AF points, weather-sealing, 8.3fps burst mode, headphone and mic ports are not to be sniffed at, but a touchscreen would have made it a little more user-friendly and its grip was a bit uncomfortable over long periods of use. This gave a solid four star rating for its Features & Build.

We awarded just three stars for Performance as its AF was considerably louder than its rivals, the write-to-card times were run-of-the-mill and the interface was a little hard to navigate. That said, if you're not deterred by the menu system, you'll be rewarded with good quality images. The K-3 II offers a lot and is certainly one to consider if you shoot day and night in all weathers.

Features & build	★★★★☆
Performance	★★★☆☆
Image quality	★★★★☆
Value for money	★★★★☆
Overall score	★★★★☆

FUJIFILM X-T10 / ADVANCED CSC / £499 BODY-ONLY

SLIMMED-DOWN STYLE

Fujifilm's X-T10 merges top specs in a tiny body. Is this the best value CSC on the market?

TEST BY MATTY GRAHAM

FUJI WERE ALREADY well established in the Compact System Camera (CSC) market when the brand released the X-T1 last year. Barely 12 months later, Fuji has served up the X-T10, which is best described as being lighter and slimmer than the X-T1, boasting a cheaper price tag while retaining most of the stand-out features from the more expensive model. It's a mouth-watering proposition and it needs to be, as the X-T10 faces strong rivals in this competitive sector of the market. With the Olympus E-M10, Samsung NX500 and Panasonic GX7 similarly priced, does the retro-styled X-T10 have enough to set itself apart from the crowd? Let's take a look and find out...

Features & Build

Fuji's cameras are well known for their chic, retro styling and the X-T10 continues this approach. The compact body is 59g lighter and 11mm slimmer than the dearer X-T1, but at first glance, the two models look very similar. Closer inspection reveals some notable differences though, both in build and features. Let's start with the build. The more affordable X-T10 only has magnesium alloy top and bottom plates, compared to the all-alloy construction of the X-T1, and it doesn't offer weather proofing. The X-T10 doesn't have a dedicated ISO dial like its big brother but does outgun the X-T1 by featuring Command dials that can be pressed to be used as function buttons. Other areas where the X-T10 goes one better is the inclusion of a threaded shutter release and, more importantly, a built-in flash – albeit with a modest Guide Number of 5 (m, ISO 200). There's also a hotshoe so you can mount an external flash or a wireless trigger.

The X-T10 features the same 16 megapixel APS-C X-Trans II sensor that's present across the X-series range of cameras, and the core features are the same as seen on the X-T1. This includes the ISO range of 200-6400 (though it can shoot up to 51,200 in JPEG only). The top shutter speed of 1/32,000sec, achieved via an electronic shutter, is the same too, and it matches the X-T1's 8fps burst rate. It also takes on a 77-point autofocus system.

However, dig a little deeper and you will find some differences between the two cameras' features. While both have a 3in tilting monitor, the X-T1 has a slightly higher resolution (1040k vs 920k). Both also offer an electronic viewfinder (EVF), but the X-T1 has a slightly higher magnification (0.77x vs 0.62x).

In its own right, the X-T10 is very well specified. A switch on the top-plate allows you to slip into Auto mode with the flick of a finger, while built-in Wi-Fi allows for remote image transfer. Another clever feature is the Auto Brightness option that works with the EVF. In bright shooting conditions, the EVF increases in luminance so you still get a clear view of the scene.

A switch on the top-plate allows you to slip into Auto mode with the flick of a finger

New feature Wide autofocus mode

Along with the conventional Fuji 49-point autofocus system, the X-T10 sees the inclusion of Zone and Wide/Tracking modes that track your subject's movement over an expanded 77-point area. These additions increase the X-T10's ability to successfully capture sharp, moving subjects in your pictures.

The X-T10 offers a high spec and amazing image quality at a keen price.

Key features of the Fujifilm X-T10

BUILT-IN FLASH

Although it's missing on the more expensive X-T1, the X-T10 includes a built-in pop-up flash that offers a Guide Number of 5 (ISO 200m).

DUAL PUSH COMMAND DIALS

To add extra functionality, the X-T10 features two dual action dials that double up as customisable buttons that can control ISO, image quality, White Balance, etc.

RETRO CHIC

The X-T10 borrows its looks from rangefinder film cameras, taking on a shutter speed dial and a threaded shutter for an old-school cable release.

TILTABLE 3IN 920K-DOT LCD DISPLAY

The rear LCD on the X-T10 isn't a touchscreen display but it boasts a resolution of 920k-dots and can be tilted up and down to help you frame up at awkward angles.

Quickspec

Street price: £599 with 16-50mm f/3.5-5.6 XC II lens (£499 body only)
Resolution: 16.3Mp (4896x3264px)
Format: JPEG & RAW (DNG or RAF)
Sensor: APS-C
ISO: 200-6,400 (expandable to 100-51,200 JPEG only)
Shutter: 30-1/4000sec (1/32,000 via electronic shutter) & Bulb mode
AF system: 77-point TTL phase & contrast detection system
Focusing modes: Manual Focus, Single AF and Continuous AF **Burst:** 8.fps
Metering: Multi, average & spot metering
Monitor: 3in, 920k-dot tiltable LCD
Viewfinder: 2360k OLED EVF with 100% coverage and 0.6x magnification
Pop-up flash: Yes **Hotshoe:** Yes
Video: Full 1080 HD @ 60/ 50/30/25p
Write speeds: 1.7secs RAW, 0.7sec JPEG
Storage: SD, SDHC and SDXC
Weight: 381g (including battery and memory card)
Dimensions: (WxHxD) 118.4x82.8x40.8mm
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EOS 70D	£729
EOS 70D + 18-135 STM	£939

EOS 760D Body	£649
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24-70mm f2.8 L II	£1,400
24-105mm f4 IS	£727
18-200mm	£445
70-200mm f4	£471

70-200mm f4 IS	£866
70-200mm f2.8 L	£975
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100% DETAIL

Image quality Detail & lens

We tested the X-T10 with the 18-55mm kit lens, which costs £100 more than the 16-50mm option and offers a film-equivalant focal length of 27-82mm. The lens offers a maximum aperture of f/2.8 at the widest focal length and delivers sharp results with minimal chromatic aberration and barrel distortion. JPEGs are impressively rich in detail and colour, while RAW files capture a vast dynamic range to make recovering detail in overexposed skies easy to achieve. In short, the X-T10 punches above its weight in image quality.

Visionary

Tripods and support

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VT RANGE

- 3-way panhead
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Max operation height:	1290mm
Min operation height:	415mm
Retracted length:	450mm
Leg Diameter:	20mm

VT 30

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Max operation height:	1530mm
Min operation height:	590mm
Retracted length:	600mm
Leg Diameter:	20mm

VT 50

Net weight:	1500g
Max operation height:	1600mm
Min operation height:	620mm
Retracted length:	640mm
Leg Diameter:	23.2mm

VT 70

Net weight:	1740g
Max operation height:	1660mm
Min operation height:	645mm
Retracted length:	660mm
Leg Diameter:	26.7mm

MONOPODS

VM 3

- Folded length 480mm
- Max length 1465mm
- 4 section
- Weight 275g
- Load capability 1.2kg
- 3 way head
- Quick release
- Spirit level
- Case included

VM 5

Completing the line-up, our Visionary M-5 is a full specification monopod.

- Max operating height: 1800mm
- Folded height: 640mm
- Max load capacity: 3KG
- Section: 4
- Tube diameter: 26.8mm
- Net weight: 600g

T830 LANDER

The T-830 remains our standard full spec medium weight tripod for telescopes.

- 2-way fluid effect head, with handle and QRP
- Bubble level
- Elevator crank, lock and friction control
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- 33mm leg
- Non slip feet
- Weight 1650g
- Retracted length 65cm,
- Max height 166cm

OPTICAL HARDWARE

Visionary tripods are manufactured and distributed by Optical Hardware Ltd and are available from your local stockist. For more information, and to find your nearest Visionary stockist visit **www.opticalhardware.co.uk/stockists**

All models and offers are subject to availability. Prices and specifications are subject to change without notice. E&O.E. Your statutory rights are not effected.

Performance & Handling

In the hand, the X-T10 feels solid and comfortable. The 18-55mm lens we tested the camera with doesn't feel too heavy and the balance wasn't affected when we switched to a heavier, 16mm f/1.4 lens. Those wanting a more secure hold can purchase an accessory grip for £90. The button and dial layout is ergonomic and easy to use out in the field, with the exception of the lever to switch the camera straight into Auto. While this is a useful feature, the lever's position makes it easy to mistake for the on/off switch.

When composing images, the EVF works amazingly well, offering a real-time view of the subject without any discernible lag. It gives a clean, clear view – even when you are panning the camera from side to side. The high performance gives a genuine choice between using the EVF or the LCD screen. Although the latter is lower in resolution than the X-T1, it's plenty bright enough and the tiltable display helps when framing up from awkward angles. In anything other than tricky, low-light conditions, the AF system works well too, finding its targets quickly. With low contrast subjects, the AF took a little longer to lock on, and this proved a little frustrating. But the AF impressed in other areas – Wide Tracking mode did a great job of assessing a scene and picking out a suitable target area to use as the focus point.

The maximum burst rate of 8fps is impressively fast and enough to capture quality action sequences. Our tests showed the X-T10 could fire off 22 JPEGs or eight RAWs before the buffer filled. This isn't a huge amount, but if your timing's reasonable, it's enough to capture a diver entering a pool or a swan landing on a lake. Write times were rather pedestrian however – 1.4secs for a Fine JPEG and 2.5secs for a single RAW.

In general operation, the X-T10 is a joy to use. Some will need to get used to rotating the aperture ring on the lens to change f-stop but if you've ever used a Fuji model, the menus and options will be very familiar. One feature that's worth its weight in gold is the Exposure Compensation dial. Situated on the top-plate with +/- 3 stops of latitude, it's quick and easy to override the camera's metering, take charge of the exposure and deliver a more balanced frame in tricky lighting conditions. Another practical inclusion is the focus mode lever on the front of the body. This allows you to use your left hand to select Single-shot, Continuous or Manual focus mode in an instant.

The tiltable 3in screen helps you to frame up from high or low angles.

Image quality ISO, JPEG & RAW image test results

With the tried and trusted X-Trans CMOS sensor and the EXR processor, the X-T10 has the tools to combat Noise and returns excellent results. Images are perfectly usable up to ISO 3200 and with some Noise Reduction treatment on the RAW files, photographers can even get away with the X-T10's top native ISO of 6400. By unlocking the expanded ISO, users can shoot up to 51,200 in JPEG, but where quality is paramount, it's better to stick to RAW with the native ISO range.

When composing images, the electronic viewfinder works amazingly well, offering a real-time view of the scene

Value for money

It's clear that for £499 body-only, the image quality, build and features on the X-T10 means the camera offers incredibly value for money. There are various kit bundles available – the 16-50mm lens offers the best value at £599. The 18-55mm kit bundle we assessed costs £799, but it does offer a faster maximum aperture of f/2.8 at its widest focal length. All in all, the X-T10 is almost £400 cheaper than the X-T1, which makes it a CSC that's very keenly priced.

DIGITAL PHOTO THE VERDICT

The X-T10 is another success for Fuji. With compact dimensions, chic styling, excellent image quality and plenty of features, it's a very attractive proposition. This does provide a buying conundrum for X-series CSC fans – do they go for the high-value X-T10 or the more refined (and steeper-priced) X-T1? This will come down to personal choice, but unless you need the weather-proof qualities of the X-T1, the pragmatic will opt for the X-T10 and spend the change on some X-series glass. If you are an existing Fuji user, with an older X-Pro1 or X-M1, switching to an X-T10 for just £499 won't disappoint. AF could be faster, but that's a minor niggle given the overall gains. With the X-T10, Fuji has built a camera that will easily hold its own in the fierce battleground of the CSC market.

Features & build	✪✪✪✪○
Performance	✪✪✪✪○
Image quality	✪✪✪✪✪
Value for money	✪✪✪✪✪
Overall score	✪✪✪✪○

GADGETS & GIZMOS

We review and rate the latest photography and imaging accessories to hit the shelves

TESTS BY ANDY HEATHER, DAN MOLD & JON ADAMS

GRAPHICS TABLET MONITOR / £1599.99

WACOM CINTIQ 22HD INTERACTIVE MONITOR

Features: 21.5in screen, 1920x1080 resolution, weighs 8.5kg **Visit:** *www.wacom.eu*

WE ALL USE A MONITOR TO EDIT our images and many of us will use graphics tablets to increase precision. Wacom's Cintiq 22HD is quite special as it integrates both technologies into a single pen display you can draw on.

The screen of this model has a resolution of 1920x1080 and measures 21.5in diagonally, though it's encased in a large housing which takes the total size to 65x40cm. There are 16 configurable ExpressKeys on this frame (eight on each side) which perform Photoshop functions like Undo. These can all be set up entirely to your liking, so once you've memorised their functions they'll give you fast access to features you need. On the back are two Touch Strips. Sliding a finger up or down these performs functions such as zooming in and out. Two Touch Strip Mode buttons on the front of the unit allow you to cycle between four different Touch Strip functions – auto scroll/zoom, cycle Layers, brush size, and rotation.

The Cintiq 22HD sits on a stand which can be rotated by 180°, it can be used completely flat on a desk or at an angle which feels like you're using an artist's easel.

Drawing on the Cintiq is done with the bundled Wacom Grip Pen which features 2,048 levels of pressure sensitivity. This is capable of creating finely-nuanced brush strokes. Also included is a weighted pen stand that can be opened to reveal 10 replacement nibs. These imitate a range of traditional drawing tools such as a paintbrushes and felt tip pens.

The Grip Pen also has a latex-free silicone rubber grip and a tip switch on its side. The switch can be rocked up or down to produce a left or right mouse click, respectively. The pen can also be flipped over and used as an eraser much like a traditional pencil in compatible apps such as Photoshop. The pen can also be tilted by up to 60° to vary the angle of your virtual brush, although this, too, requires compatible software. Despite packing in all of this functionality, the pen itself doesn't contain a battery so you'll never have to charge it.

The big question is how does it perform? Well, for anyone who's accustomed to drawing on paper, the Cintiq will feel familiar. After a little practice, we found it much easier than using a mouse or even a standard graphics tablet. The display gives just enough resistance to replicate the feeling of a real paper and pen. In Photoshop, the pressure-sensitive pen can give you control over line weight, opacity, and angle, depending on your brush settings.

As you would expect, there's a gentle learning curve to using a pen on a screen instead of a mouse. You'll have to get used to the fact that there are layers of glass between the pen tip and the on-screen image. That means there's a small gap between your cursor and the pen tip. Unless your head is aligned directly behind the pen, that tiny gap can create the sensation that the cursor is offset or misaligned. However, we found this an easier adjustment to make than drawing brushstrokes on a traditional graphics tablet while looking up at an on-screen cursor. This feels more disconnected by comparison. Making brushstrokes with the Cintiq became second nature in next to no time.

The screen is large enough to clearly see every pixel of your image. However, the surface coating has a very slight dimming effect and at Full HD resolution, images don't look as crisp as they would on a retina display, so care has to be taken not to overcompensate with too much saturation or sharpening.

THE VERDICT

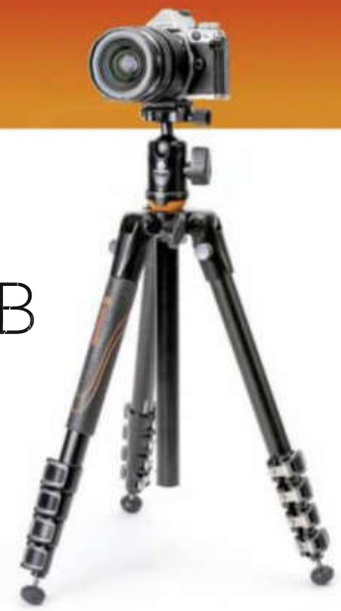
A Cintiq is a serious investment, but if you're creating multi-layer composites, making detailed Selections, or retouching portraits on a daily basis, the Cintiq 22HD is fantastic to use and highly recommended.

RATING ★★★★☆

TRAVEL TRIPOD / £99.95

VANGUARD 235AB

Features: Maximum height 145cm, weight 1.5kg, invertible centre column **Visit:** *www.vanguardworld.co.uk*



BACK IN OUR JULY ISSUE WE looked at Vanguard's VEO 37 sling bag which has a compartment for specific travel tripods. One such model is the VEO 235AB, a five-section aluminium tripod featuring a maximum leg width of 23mm and a ball head. The 235AB can rise to a modest 145cm but its thinnest leg sections measure just 11mm in diameter so we found a small amount of 'whip' at this height.

A built-in mechanism allows the centre column to be flipped by 180° for shooting really low to the ground, and also allows the tripod to be reduced to a compact size of 378mm when collapsed.

There's a large push button at the top of each leg which makes it easy to set the legs to one of the three angles. Each of the five leg sections have a serviceable flip-lock which can be tightened with the supplied hex key should it loosen over time. Also included is a sling bag to carry it and a short centre column that can be used to get low and maintain the camera's correct orientation.

It weighs 1.5kg but can support up to 5kg of gear. Securing your camera to the sticks is Vanguard's diminutive TBH-50 ball head. The head has a single lever to tighten the ball and a lever to pan. An Arca-Swiss plate system is supported, though there's no quick release safety mechanism and the supplied plate requires a coin to affix it to your camera.

THE VERDICT

The VEO 235 AB packs a huge amount of features into a very compact and sturdy set of sticks, making it fantastic value.

RATING ★★★★★

USB CHARGER / £44.99

DIGIPOWER 4-PORT USB WALL CHARGER

Features: InstaSense charging technology, 4 USB ports, UK and EU plugs **Visit:** *www.intro2020.co.uk*

IF YOU'RE LIKE US, you'll have a host of USB-powered accessories that need charging on a daily basis. Smartphones, tablets, MP3 players, power packs – the list goes on. To avoid having your peripheral gadgets scattered around the house using individual USB power adapters, DigiPower's 4-port USB wall charger tidies things up by putting them all in one place. It's just like a 4-gang mains adapter, only is much smaller and offers four USB sockets instead.

The charger uses DigiPower's InstaSense technology, which instantly assesses the connected device via the cable and delivers the correct amount of power, up to a maximum of 4.2A. That means you can deliver the higher charge required for iPads at the same time as the lower charge required for older or less hungry devices.

In operation, it's fuss-free – you just plug in your gadgets and let the charger do its job. With an RRP of £44.99, it may seem a luxury considering it replaces what you already have, but you get the assurance of high-quality circuitry and the convenience of a charging all your devices from one base.

THE VERDICT

Simple to use and effective, DigiPower's 4-port charger provides a great way to keep your gadgets topped up with power.

RATING ★★★★☆

TRIED & TRUSTED

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PNY FLASH MEMORY CARD CASE £9.99

Dan says: The PNY Memory Card Case has been protecting my cards for the last couple of years. It can hold up to eight SDs in addition to four CompactFlash cards. It has a rubber seal and sturdy clip to keep out water and sand, and it's shock-resistant too. Camera bags don't always have a dedicated card pocket so this case is a fantastic way of keeping my flash memory safe and organised. ▶ *www.pny.eu*

LENSPEN ELITE ORIGINAL £9.99

Jon says: The Lenspen Elite Original Cleaning Tool is so small and portable it's always in my camera bag. The retractable brush removes dust particles, and the carbon compound that coats the tip removes smears and fingermarks from lenses, filters and LCD screens. Said to be good for around 500 uses, mine's still got a few years of service left! ▶ *www.lenspen.com*

GOPRO HERO £95

Matty says: I've owned the entry-level GoPro for almost a year now. It stays in my kit bag and is great for capturing ideas and behind-the-scenes pics when I'm shooting. I've even tried some underwater images (the Hero offers 5Mp stills) and it gives impressive results. ▶ *www.gopro.com*

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Digital Photography Ink Test Winner ★★★★★

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Compatibles:
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Colours 14ml each £3.99

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PG540 Black 8ml £10.99
PG540XL Black 21ml £15.99
CL541 Colour 8ml £13.99
CL541XL Colour 15ml £15.99
PG545XL Black 15ml £13.99
CL546XL Colour 13ml £15.99
Compatibles:
PGi5 Black 27ml £4.99
CLi8 Colours 13ml £3.99
PGi5/CLi8 Set of 5 £19.99
PGi520 Black 19ml £4.99
CLi521 Colours 9ml £3.99
PGi520/CLi521 Set of 5 £19.99
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No.16XL Colours 6.5ml each £11.99
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No.24 Colours 4.6ml each £7.99
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No.24 Black 7ml £3.99
No.24 Colours 7ml each £3.99

No.26 Polar Bear Inks
Originals:
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No.26 Black 6.2ml £8.99
No.26 Colours 4.5ml each £7.99
No.26XL Set of 4 £49.99
No.26XL Black 12.1ml £14.99
No.26XL Colours 9.7ml each £13.99
Compatibles:
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No.26 Black 10ml £3.99
No.26 Colours 7ml each £3.99

T0481-T0486 Seahorse Inks
Originals:
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Compatibles:
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Colours 13ml each £3.99

T0541-T0549 Frog Inks
Originals:
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Colours 13ml each £14.99
Compatibles:
Set of 8 £27.99
Colours 13ml each £3.99

T0591-T0599 Lily Inks
Originals:
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Colours 13ml each £3.99

More Epson inks >>>

Albums & Frames

We now stock a comprehensive range of frames, mounts, albums and accessories. The full range can be viewed on our website, with detailed close-up images of each product to help you choose the perfect way to display your printed photographs. Below is just a tiny sample of what we offer:

Grace Albums Available in Burgundy or Blue.

Travel Albums Over a dozen designs in stock.

Grafton Albums Available in Burgundy or Blue.

Baby Albums Multiple different designs available.

Emilia Frames Distressed wood shabby chic effect. Blue or White.

Rio Frames Handcrafted solid wood with 30mm wide profile, in four colours.

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Grace 6x4 200 photos £9.99
Grace 6x4 300 photos £14.99
Grace 7x5 100 photos £7.99
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Grafton 6x4 200 photos £9.99
Grafton 7x5 200 photos £13.99
Baby 6x4 200 photos £9.99
Travel 6x4 200 photos £8.99

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Accessories:
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Frisco 8x6 seven colours £2.79
Frisco 9x6 seven colours £3.49
Frisco 10x8 seven colours £3.79
Frisco 12x8 seven colours £4.59
Frisco A4 seven colours £3.99
Frisco A3 seven colours £8.99

Wood Bevel, Glass Front:
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Emilia 7x5 two colours £5.99
Emilia 8x6 two colours £6.99
Emilia 10x8 two colours £7.99
Emilia 12x8 two colours £8.99
Rio 6x4 four colours £5.99
Rio 7x5 four colours £6.99
Rio 8x6 four colours £7.99
Rio 10x8 four colours £8.99
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Colours 5.5ml each £8.99
Compatibles:
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Black 7.4ml £4.99
Colours 5.5ml each £3.99

T0791-T0796 Owl Inks
Originals:
Set of 6 £72.99
Colours 11.1ml each £12.99
Compatibles:
Set of 6 £19.99
Colours 11.1ml each £3.99

T0801-T0806 Hummingbird Inks
Originals:
Set of 6 £49.99
Colours 7.4ml each £8.99
Compatibles:
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Colours 7.4ml each £3.99

T0871-T0879 Flamingo Inks
Originals:
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Colours 11.4ml each £9.99
Compatibles:
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Colours 11.4ml each £3.99

T0961-T0969 Husky Inks
Originals:
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Colours 11.4ml each £8.99
Compatibles:
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Colours 11.4ml each £3.99

T1571-T1579 Turtle Inks
Originals:
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Colours 25.9ml each £18.99

T7601-T7609 Killer Whale
Originals:
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Colours 25.9ml each £18.99

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Originals:
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No.62XL Black 12ml £21.99
No.62XL Colour 11.5ml £23.99
No.300 Black 4ml £10.99
No.300 Colour 4ml £12.99
No.301 Black 3ml £9.99
No.301 Colour 3ml £11.99
No.301XL Black 8ml £18.99
No.301XL Colour 6ml £18.99
No.350 Black 4.5ml £11.99
No.351 Colour 3.5ml £14.99
No.363 Black 6ml £13.99
No.363 C/M/Y/PC/PM each £9.99
No.363 SET OF 6 £39.99
No.364 Black 6ml £7.99
No.364 PB/C/M/Y 3ml each £6.99
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No.364XL PB/C/M/Y 6ml each £12.99
No.364XL SET OF 4 £49.99
No.920XL SET OF 4 £46.99
No.932XL SET OF 4 £43.99
No.950XL SET OF 4 £69.99
Compatibles:
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No.21 Black 10ml £7.99
No.22 Colour 21ml £11.99
No.45 Black 45ml £4.99
No.56 Black 24ml £9.99
No.57 Colour 24ml £12.99
No.78 Colour 36ml £9.99
No.110 Colour 12ml £10.99
No.300XL Black 18ml £14.99
No.300XL Colour 18ml £16.99
No.301XL Black 15ml £14.99
No.301XL Colour 18ml £16.99
No.337 Black 21ml £10.99
No.338 Black 21ml £10.99
No.339 Black 34ml £12.99
No.343 Colour 21ml £12.99
No.344 Colour 21ml £14.99
No.348 Photo 21ml £12.99
No.350XL Black 30ml £14.99
No.351XL Colour 20ml £16.99
No.363 Black 20ml £6.99
No.363 Colours 6ml each £4.99
No.363 SET OF 6 £24.99
No.364 Black 10ml £4.99
No.364 Colours 5ml each £3.99
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No.364XL Colours 11ml each £7.99
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Photo Satin 200gsm:
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A4 100 sheets +100 FREE £19.99
Photo Glossy 200gsm:
6x4 100 sheets +100 FREE £9.99
A4 20 sheets £6.99
Premium Pearl 270gsm:
6x4 50 sheets +50 FREE £6.99
A4 20 sheets +20 FREE £8.99
Premium Gloss 270gsm:
A4 25 sheets OFFER £8.99
A3 25 sheets OFFER £15.99
A3+ 25 sheets OFFER £19.99
Smooth Pearl 310gsm:
6x4 100 sheets £14.99
7x5 100 sheets £17.99
A4 25 sheets £12.99
A4 100 sheets £39.99
A4 250 sheets £84.99
A3 25 sheets £25.99
A3+ 25 sheets £35.99
17" Roll 30 metres £69.99
24" Roll 30 metres £96.99
Smooth Gloss 310gsm:
6x4 100 sheets £14.99
7x5 100 sheets £17.99
A4 25 sheets £12.99
A4 100 sheets £39.99
A3 25 sheets £25.99
A3+ 25 sheets £35.99
Premium Matt Duo 200 gsm:
A4 50 sheets £12.99
A3+ 50 sheets £34.99
Heavy Duo Matt 310gsm:
A4 50 sheets £17.99
A3+ 50 sheets £44.99
Gold Fibre Silk 310gsm:
A4 50 sheets £37.99
A3+ 50 sheets £89.99
Gold Mono Silk 270gsm:
A4 25 sheets £16.99
A3+ 25 sheets £42.99

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A4 50 sheets £17.99
A3 50 sheets £34.99
A3+ 25 sheets £25.99
Panoramic 25 sheets £26.99
17" Roll 30 metres £68.99
24" Roll 30 metres £85.99
PF Lustre 275gsm:
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7x5 100 sheets £16.99
A4 50 sheets £17.99
A3 25 sheets £35.99
A3+ 50 sheets £47.99
Panoramic 25 sheets £26.99
17" Roll 30 metres £69.99
24" Roll 30 metres £86.99
PF Gloss 270gsm:
A4 50 sheets £17.99
A3 50 sheets £35.99
A3+ 50 sheets £47.99
Panoramic 25 sheets £26.99
Matt Ultra 240gsm:
A4 50 sheets £12.99
A3 50 sheets £26.99
A3+ 50 sheets £35.99
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Baryta A4 20 sheets £21.99
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Etching A4 25 sheets £19.99
Etching A3 25 sheets £34.99
Smooth Cotton A4 25 sh £24.99
Smooth Cotton A3 25 sh £51.99

Canon

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A4 20 sheets £11.99
A3 20 sheets £27.99
A3+ 20 sheets £36.99
PT-101 Pro Platinum 300gsm:
6x4 20 sheets £7.99
A4 20 sheets £16.99
A3 20 sheets £37.99
A3+ 10 sheets £24.99
SG-201 Semi-Gloss 260gsm:
6x4 50 sheets £9.99
A4 20 sheets £11.99
A3 20 sheets £27.99
A3+ 20 sheets £42.99
LU-101 Pro Lustre 260gsm:
A4 50 sheets £14.99
A3 50 sheets £32.99
A3+ 50 sheets £49.99

Permajet

Smooth Pearl 280gsm:
6x4 100 sheets £12.99
7x5 100 sheets £18.99
A4 50 sheets £18.99
A4 50 sheets £18.99
A3 50 sheets £35.99
A3+ 25 sheets £28.99
17" Roll 30 metres £64.99
24" Roll 30 metres £89.99
Ultra Pearl 295gsm:
6x4 100 sheets £14.99
7x5 100 sheets £20.99
A4 25 sheets £12.99
A3 25 sheets £22.99
A3+ 25 sheets £30.99
13" Roll 10 metres £21.99
17" Roll 30 metres £68.99
24" Roll 30 metres £92.99
Titanium Lustre 280gsm:
A4 25 sheets £22.99
A3 25 sheets £44.99
A3+ 25 sheets £62.99
Oyster 271gsm:
6x4 100 sheets £12.99
7x5 100 sheets £18.99
A4 50 sheets £18.99
A3 25 sheets £22.99
A3+ 25 sheets £28.99
13" Roll 10 metres £26.99
17" Roll 30 metres £64.99
24" Roll 30 metres £89.99
Gloss 271gsm:
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7x5 100 sheets £18.99
A4 50 sheets £18.99
A3 25 sheets £22.99
A3+ 25 sheets £28.99
13" Roll 10 metres £26.99
17" Roll 30 metres £64.99
24" Roll 30 metres £89.99
Matt Plus 240gsm:
6x4 100 sheets £10.99
7x5 100 sheets £13.99
A4 50 sheets £13.99
A3 25 sheets £17.99
A3+ 25 sheets £22.99
13" Roll 10 metres £24.99
17" Roll 30 metres £42.99
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Matt Proofing 160gsm:
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A3 75 sheets £22.99
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A3 50 sheets £27.99
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A3+ 20 sheets OFFER £24.99
Ultra Gloss 300gsm:
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7x5 50 sheets £12.99
A4 15 sheets £11.99
Premium Semi-Gloss 251gsm:
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A4 20 sheets £14.99
A3 20 sheets £29.99
A3+ 20 sheets OFFER £24.99
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A3+ 50 sheets £44.99
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128GB £54.99

1000X (150MB/s)
16GB £14.99
32GB £22.99
64GB £35.99
128GB £63.99

2000X (300MB/s)
32GB £51.99
64GB £95.99

Sandisk Blue
33X (5MB/s)
4GB £3.49
8GB £3.99
16GB £5.99

Sandisk Ultra
266X (40MB/s)
8GB £4.99
16GB £6.99
32GB £12.99
64GB £24.99

Sandisk Extreme
400X (60MB/s)
16GB £10.99
32GB £17.99
64GB £34.99

Sandisk Extreme Pro
633X (95MB/s)
16GB £17.99
32GB £23.99
64GB £42.99
128GB £82.99

1866X (280MB/s)
16GB £49.99
32GB £79.99
64GB £129.99

Compact Flash

Lexar Professional

800X (120MB/s)
8GB £19.99
16GB £27.99
32GB £36.99
64GB £56.99

1066X (160MB/s)
16GB £33.99
32GB £56.99
64GB £99.99
128GB £192.99

Sandisk Ultra
333X (50MB/s)
8GB £11.99
16GB £15.99
32GB £24.99

Sandisk Extreme
800X (120MB/s)
16GB £26.99
32GB £32.99
64GB £47.99
128GB £94.99

Sandisk Extreme Pro
1066X (160MB/s)
16GB £33.99
32GB £47.99
64GB £82.99
128GB £149.99

XQD Cards

Lexar Professional
1333X (200MB/s)
32GB £69.99
64GB £99.99

MicroSDHC & SDXC

Lexar Professional
633X (95MB/s)
32GB £21.99
64GB £43.99

Delkin Professional
375X (56MB/s)
32GB £16.99
64GB £32.99

Sandisk Ultra
320X (48MB/s)
16GB £6.99
32GB £12.99
64GB £24.99

Readers & Cases

Lexar USB3 Card Reader £22.99
Lexar HR1 Workflow Hub £49.99
Delkin USB2 Card Reader £9.99
Delkin USB3 Card Reader £19.99
Delkin SD Card (x8) Case £6.99
Delkin CF Card (x4) Case £6.99

Batteries

Replacement rechargeable Li-ion batteries, manufactured by Hahnel or Blumax. All come with a two-year guarantee.

NB-2L/LH for Canon £9.99
NB-4L for Canon £9.99
NB-5L for Canon £9.99
NB-6L for Canon £9.99
NB-7L for Canon £9.99
NB-9L for Canon £9.99
NB-10L for Canon £12.99
NB-11L for Canon £12.99
BP-511 for Canon £12.99
LP-E5 for Canon £9.99
LP-E6 for Canon £16.99
LP-E8 for Canon £12.99
LP-E10 for Canon £12.99
LP-E12 for Canon £12.99
NP45 for Fuji £9.99
NP50 for Fuji £9.99
NP95 for Fuji £9.99
NPW126 for Fuji £12.99
NP400 for Fuji £12.99
EN-EL3E for Nikon £14.99
EN-EL5 for Nikon £9.99
EN-EL9 for Nikon £12.99
EN-EL10 for Nikon £9.99
EN-EL11 for Nikon £9.99
EN-EL12 for Nikon £9.99
EN-EL14 for Nikon £19.99
EN-EL15 for Nikon £24.99
EN-EL19 for Nikon £12.99
EN-EL20 for Nikon £12.99
EN-EL21 for Nikon £12.99
Li10B/12B for Olympus £9.99
Li40B/42B for Olympus £9.99
Li50B for Olympus £9.99
BLM-1 for Olympus £12.99
BLN-1 for Olympus £24.99
BLS-1 for Olympus £12.99
BLS-5 for Olympus £15.99
CGR-S006 for Panasonic £9.99
CGA-S007 for Panasonic £9.99
DMW-BCG10 Panasonic £19.99
DMW-BCM13 Panasonic £19.99
DMW-BLB13 Panasonic £27.99
DMW-BLC12 Panasonic £23.99
DMW-BLD10 Panasonic £23.99
DMW-BLG10 Panasonic £22.99
DMW-BMB9 Panasonic £22.99
D-Li90 for Pentax £12.99
D-Li109 for Pentax £12.99
SLB-1137D for Samsung £9.99
SLB-1674 for Samsung £12.99
BG-1 for Sony £19.99
BX-1 for Sony £14.99
BY-1 for Sony £12.99
NP-FM500H for Sony £19.99
NP-FH50 for Sony £19.99
NP-FW50 for Sony £24.99

Battery Grips

Professional battery grips, made by Hahnel.

5DMkII for Canon £84.99
5DMkIII for Canon £84.99
6D for Canon £84.99
7D for Canon £84.99
70D for Canon £84.99
650D/700D for Canon £84.99
D600 for Nikon £84.99
D800/D810 for Nikon £84.99
D3300/D5300 for Nikon £74.99
D7100 for Nikon £84.99

Battery Chargers

Universal Chargers
Unipal ORIGINAL £19.99
Unipal PLUS £24.99
Unipal EXTRA £29.99

AA & AAA Chargers
Hahnel TC Novo inc. 4xAA £8.99
Energizer Pro inc. 4xAA £14.99
Energizer 1 Hr inc. 4xAA £22.99

Other Batteries

Pre-Charged Rechargables
AA GP Recyko 3+1 FREE £5.24
AAA GP Recyko 3+1 FREE £5.24
AA Energizer Extreme (4) £8.99
AAA Energizer Extreme (4) £6.99

Standard Rechargeables
AA GP 2600mAh (4) £9.99
AA Lloytron 1300mAh (4) £3.99
AA Lloytron 2700mAh (4) £6.99
AAA Lloytron 1100mAh (4) £3.99

Lithium Batteries
AA Energizer Ultimate (4) £5.99
AAA Energizer Ultimate (4) £5.99
CR123A Energizer (1) £1.99
CR2 Energizer (1) £1.99
2CR5 Energizer (1) £3.99
CRP2 Energizer (1) £3.99
CRV3 Energizer (1) £5.99
A544 Energizer Alkaline (1) £1.99
A23 Energizer Alkaline (1) £1.99
LR44 Energizer Alkaline (2) £1.99
CR2025, **CR2032** etc £1.99

Filters

One of the largest ranges of screw-in threaded filters in the UK, from Hoya, Kood and Marumi. We carry sizes from 24mm, up to 105mm, and offer Clear Protectors, UVs, Skylights, Circular Polarisers, ND4s, ND8s, ND16s, ND32s, ND64s, ND500s, ND1000s, Variable NDs, Starbursts, Close Up Sets and more! Below are just a few examples...

KOOD Slim Frame
UV Filters
37mm £4.49
40.5mm £4.49
46mm £4.49
49mm £4.49
52mm £4.49
55mm £5.49
58mm £6.99
62mm £7.99
67mm £8.99
72mm £9.99
77mm £11.99
82mm £14.99
86mm £19.99

KOOD Slim Frame
Circular Polarisers
37mm £12.99
40.5mm £12.99
46mm £12.99
49mm £12.99
52mm £14.99
55mm £15.99
58mm £17.99
62mm £19.99
67mm £22.99
72mm £26.99
77mm £29.99
82mm £34.99
86mm £39.99

KOOD
ND4 & ND8 Filters
52mm £26.99
58mm £34.99

Marumi DHG Slim Frame Multi-coated
Clear Protectors
37mm £10.99
43mm £10.99
46mm £10.99
49mm £10.99
52mm £10.99
55mm £11.99
58mm £12.99
62mm £14.99
67mm £15.99
72mm £17.99
77mm £19.99
82mm £22.99

Marumi DHG Slim Frame Multi-coated
UV Filters
52mm £13.99
58mm £15.99
62mm £17.99
67mm £19.99
72mm £21.99
77mm £24.99

Marumi DHG Slim Frame Multi-coated
Circular Polarisers
52mm £31.99
58mm £35.99
62mm £39.99
67mm £44.99
72mm £49.99
77mm £54.99
82mm £69.99

Hoya HMC Slim Frame
UV Filters
37mm £12.99
40.5mm £12.99
46mm £12.99
49mm £11.99
52mm £11.99
58mm £14.99
62mm £16.99
67mm £18.99
72mm £21.99
77mm £25.99
82mm £29.99

HOYA Pro-1D Slim Frame Multi-coated
Clear Protectors
52mm SPECIAL £16.99
58mm £28.99
62mm £31.99
67mm £35.99
72mm £39.99
77mm SPECIAL £29.99
82mm £49.99

HOYA Pro-1D Slim Frame Multi-coated
Circular Polarisers
52mm £52.99
58mm £60.99
62mm £67.99
67mm £75.99
72mm £90.99
77mm SPECIAL £79.99
82mm £120.99

Square Filters

We stock three widths of square filters: A-type (67mm wide), P-Type (84mm wide) and Z-Type (100mm wide). Made in the UK, Kood square filters are optically flat, with excellent colour density, neutrality and stability. They received a maximum 5 star rating from Digital Camera Magazine.

P-Type: 84mm wide filters
Standard Holder £5.99
Wide Angle Holder £6.99
Filter Wallet for 8 filters £9.99
Adapter Rings 49-82mm £4.99
Circular Polariser £27.99
ND2 Solid £12.99
ND2 Soft Graduated £13.99
ND2 Hard Graduated £13.99
ND4 Solid £12.99
ND4 Soft Graduated £13.99
ND4 Hard Graduated £13.99
ND8 Solid £14.99
ND8 Soft Graduated £15.99
ND8 Hard Graduated £15.99
Light Blue Graduated £12.99
Dark Blue Graduated £12.99
Light Tobacco Graduated £12.99
Dark Tobacco Graduated £12.99
Light Sunset Graduated £14.99
Dark Sunset Graduated £14.99
Starbursts x4, x6, x8 £17.99
Red/Green/Yellow each £14.99
Six-piece ND Filter Kit £59.99
A popular kit containing an ND2, ND2 Soft Grad, ND4, ND4 Soft Grad, Filter Holder, plus Adapter Ring of your choice (49-82mm).

Z-Type: 100mm wide filters
Pro Holder £24.99
Adapter Rings 52-95mm £8.99
ND2 Solid £16.99
ND2 Soft Graduated £17.99
ND2 Hard Graduated £17.99
ND4 Solid £16.99
ND4 Soft Graduated £17.99
ND4 Hard Graduated £17.99
ND8 Solid £18.99
ND8 Soft Graduated £19.99
ND8 Hard Graduated £19.99
Light Blue Graduated £17.99
Dark Blue Graduated £17.99
Light Tobacco Graduated £17.99
Dark Tobacco Graduated £17.99
Light Sunset Graduated £18.99
Dark Sunset Graduated £18.99

A-Type: 67mm wide filters
Standard Holder £4.99
Adapter Rings 37-62mm £8.99
ND2 Solid £10.99
ND2 Graduated £11.99
ND4 Solid £10.99
ND4 Graduated £11.99
ND8 Solid £11.99
ND8 Graduated £12.99

Lens Accessories

Bayonet-Fit Lens Hoods
ES-62 Canon 50/1.8 £9.99
ES-71II Canon 50/1.4 £9.99
ET-60 Canon 75-300/4-5.6 £9.99
ET-65B Canon 70-300/4-5.6 £9.99
ET-67 Canon 100/2.8 Macro £9.99
ET-67B Canon 60/2.8 £9.99
EW-60C Canon 18-55 IS £7.99
EW-63C Canon 18-55 IS STM £9.99
EW-73B Canon 18-55 IS £9.99
EW-78BII Canon 28-135 IS £9.99
EW-78D Canon 18-200 IS £9.99
EW-78E Canon 15-85 IS £12.99
EW-83E Canon 17-40/4.0 £12.99
HB-32 Nikon 18-105 VR £7.99
HB-45 Nikon 18-55 VR £7.99

Stepping Rings
25mm to 105mm
160 different sizes £4.99-5.99

Reversing Rings
52mm to 77mm
Canon, Nikon, Sony, Olympus and Pentax £9.99-19.99

Coupling Rings
49mm-77mm £9.99-£11.99

Screw-Fit Lens Hoods
37mm Rubber Hood £3.99
40.5mm Rubber Hood £3.99
43mm Metal Hood £5.99
46mm Rubber Hood £3.99
46mm Metal Hood £5.99
49mm Rubber Hood £3.99
49mm Shaped Petal Hood £6.99
52mm Rubber Hood £3.99
52mm Shaped Petal Hood £6.99
55mm Rubber Hood £3.99
55mm Shaped Petal Hood £6.99
58mm Rubber Hood £3.99
58mm Shaped Petal Hood £6.99
62mm Rubber Hood £4.99
62mm Shaped Petal Hood £7.99
67mm Rubber Hood £4.99
67mm Shaped Petal Hood £7.99
72mm Rubber Hood £5.99
72mm Shaped Petal Hood £9.99
77mm Rubber Hood £5.99
77mm Shaped Petal Hood £9.99

Lens Caps
Lens Caps Centre-Pinch £2.99
Body & Rear Lens Caps £3.99

Straps & Accessories

peak design

The ingenious Peak Design Clutch, Slide, Leash, Cuff & Capture Clip System. Entire range in stock.

From £15.99

BLACKRAPID

Sling Straps from £29.99

OP TECH USA

Neoprene Straps from £11.99

Tripods & Monopods

Manfrotto Carbon Fibre Monopod Only £59

Manfrotto XPRO 3 Way Head £99

3 Legged Thing

EVO3 IS HERE
Vyv £149
Rick £199
Brian £349

NEW Manfrotto 190 & 055 tripods from just £149

Manfrotto

hähnel

Triad 30 Tripod with BH30 Ball Head Only £39

Camera Bags

Billingham

A big range of Billingham bags starting at £109

MindShift

Mind Shift bags from £27

thinkTANK photo

Entire range of ThinkTank bags in stock, from just £25.99

Action Cameras

GoPro

HERO4

A massive range of GoPro Cameras, Batteries, Memory Cards and Accessories in stock at competitive prices!

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Hero4 Black £CALL US
Hero4 Session £CALL US
Battery Hero3+ £14
Battery Hero4 £14
Dual Charger Hero3+ £25
Dual Charger Hero4 £39
Battery BacPac £39
LCD Touch BacPac £59
Blackout Housing £39
Tripod Mounts £7
Chest Harness £29
Head Strap £14
Helmet Strap £12
Handlebar Mount £14
The Handler £21

E&OE. Prices may be subject to change, but hopefully not!

Uttings

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SWAROVSKI OPTIK ATX/STX MODULAR TELESCOPES

FREE Swarovski Cleaning Kit worth £30

SWAROVSKI OPTIK PREMIER DEALER

12 Months Interest Free Credit

A choice of 3 Objective Modules(65, 85 & 95 mm and 2 eyepiece modules (angled / straight) for a total of 6 different options.

	RRP	NOW	12 MONTHS INTEREST FREE CREDIT 10% Dep	Monthly Payment
OBJECTIVE MODULES (REQUIRES EYEPIECE)				
65mm Objective Module	£690	£620	£62	£46.50
85mm Objective Module	£1200	£1080	£108	£81
95mm Objective Module	£1490	£1340	£134	£100.50
EYEPIECE MODULES				
ATX Angled Eyepiece Module	£1700	£1530	£153	£114.75
STX Straight Eyepiece Module	£1700	£1530	£153	£114.75
CASES				
2 Piece Stay on Case		£192		
BUNDLE OPTIONS Includes FREE Lowepro Scope Travel 200AW Backpack RRP £139				
ATX/STX 25-60x65	£2390	£2150	£215	£161.25
ATX/STX 25-60x85	£2900	£2610	£261	£195.75
ATX/STX 30-70x95	£3190	£2870	£287	£215.25
ATX/STX ACCESSORIES				
TLS APO Apochromat Telephoto Lens System for ATX/STX				£391
DCB II Swing Adapter for ATX/STX				£292
SSR II Telescope Rail				£120
Stay on Case for Objective Modules				£105
Stay on Case for ATX/STX Eyepiece Modules				£97

See the ATX/STX in action on YouTube

3 OBJECTIVES • 2 EYEPIECES • 6 COMBINATIONS

PREMIER AUTHORISED DEALER — APO TELEVID SPOTTING SCOPES

Robustly engineered construction with a compact design. Offering a wide field of view with high colour fidelity, pin-sharp detail resolution & maximum contrast.

FREE LOWEPRO SCOPE TRAVEL 200AW BACKPACK RRP £139 WITH EVERY LEICA BUNDLE

	RRP	NOW
APO Televid 82 Angled or Straight c/w 25-50x WW	£3230	£2699
APO Televid 65 Angled or Straight c/w 25-50x WW	£2630	£2199
Leica Stay on Case was £180 NOW ONLY £155	Photo Adaptor RRP £520 NOW £469	
SKUA Stay on Case £79	Leica 1.8x Extender £299	

BUNDLE DEALS... PLUS FREE Tripod Carrying System RRP £69 with TSN 883

SAVE £700

SAVE £300

TSN 883/884 — Kowa

Redefining the standards of color fidelity.

TSN 883/884 c/w 25-60x, SOC & Tripod Carrying System £2999 £2299

Kowa Eyepieces from £195
Kowa Stay on Cases from £49

TSN 663/664 — Kowa

	RRP	NOW
TSN 663 c/w 25-60x & SOC	£1399	£1099

TSN 601/2 — Kowa

Light weight ideal for beginners

	RRP	NOW
TSN 601 - Body Only	£521	£399
TSN 601 c/w 25-60x & SOC	£899	£815

DIASCOPE SPOTTING SCOPES — ZEISS

SAVE UP TO £596

ZEISS PREMIER DEALER

Innovative high performance spotting scopes with dual focus system and wide panorama field of view, unmatched brilliant imaging and up to 75x zoom

24 & 36 Months Finance

BUNDLES	RRP	NOW	24 & 36 MONTHS FINANCE AVAILABLE 10% Deposit	Monthly Payment from
65 T*FL Angled or Straight c/w 15-56x Eyepiece	£2230	£1699	£170	£55.23
85 T*FL Angled c/w 20-75x Eyepiece	£2695	£2099	£210	£68.24

DIASCOPE ACCESSORIES — Zeiss Stay on Case RRP £150 NOW £125 • SKUA Stay on Case £79

NEW ZEISS TRIPOD SET with Video Head and Carry strap RRP £380 NOW £339.99

Lowepro OPTICS SERIES

Scope Travel 200 AW - Backpack RRP £139 £69

Lowepro FREE LOWEPRO SCOPE TRAVEL 200AW BACKPACK RRP £139

With all Swarovski ATS/STS or ATX/STX Bundles

SWAROVSKI OPTIK ATS/STS HD HIGH DEFINITION

Giving you all the features that you would look for in a lightweight, reliable spotting scope, providing the perfect start for anyone taking an interest, for instance, in the world of birdwatching.

ANGLED OR STRAIGHT	RRP	NOW	12 MONTHS INTEREST FREE CREDIT 10% Deposit	Monthly Payment from
ATS/STS HD 65mm	£1200	£1080	£108	£81
ATS/STS HD 80mm	£1720	£1549	£155	£116.16
BUNDLE OPTIONS - ANGLED OR STRAIGHT Includes FREE Lowepro Scope Travel 200AW Backpack RRP £139				
ATS/STS HD 65mm c/w 20-60x zoom	£1620	£1459	£146	£109.41
ATS/STS HD 65mm c/w 25-50x zoom	£1710	£1539	£154	£115.41
ATS/STS HD 80mm c/w 20-60x zoom	£2140	£1928	£193	£144.58
ATS/STS HD 80mm c/w 25-50x zoom	£2230	£2008	£201	£165.58
ATS/STS ACCESSORIES			**EYEPIECES**	
TLS 800 Telephoto Lens for your SLR	£435		20-60x S Zoom Eyepiece	£379
DCB II Swing Adapter	£278		25-50x W Zoom Eyepiece	£459
SSR II Telescope Rail	£120			
Stay on Case	£155			

PA-i5 ADAPTER
Turn your iPhone in a single motion into a telephoto zoom lens.
for iPhone 5/5s £115
Additional Adapters £17

Manfrotto CARBON FIBRE TRIPODS — DEAL OF THE MONTH

SAVE £55

SAVE UP TO £150

BEFREE Aluminium Travelling Tripod RRP £174.99 NOW £119

	RRP	NOW
MT190 CX PRO3	£344.95	£225
MT190 CX PRO4	£359.95	£239
MT155 CX PRO3	£394.95	£244
MT155 CX PRO4	£359.95	£279

SWAROVSKI OPTIK Birding Tripods

Ideal for Birdwatching

	RRP	NOW
Aluminium Tripods		
AT101		£179
AT101 c/w DH101 Head		£349
Carbon Fibre Tripods		
CT Travel c/c DH101 Head		£489
CT101 c/w DH101 Head		£499

SLIK D3 MASTER CLASSIC TRIPOD

Bill Oddie's favourite

Comes complete with 2 Way Pan Head (RRP £195) OUR PRICE £139

HIDE CLAMPS & MOUNTS

Opticron Car Window Mount £46	Opticron BC 2 Hide Mount £79	Opticron Universal Mount £55
Velbon Hide Clamp £45.99	Leupold Window Mount £84.99	Manfrotto Column Clamps from £74.99

DIGISCOPING with SWAROVSKI OPTIK

ATX + DCB II — 3-6x Zoom Compact — 20-60x Porrolin — System

STX + DBI Adapter System — DSLR

Adapter Ring For PA-i5 iPhone Digiscoping	£17	DCB-5 Digital Camera Base inc. Balance	£299
T2 Adaptor - Canon	£21.99	Rail (Straight)	
T2 Adaptor - Nikon	£21.99	TLS APO Apochromat Telephoto Lens	£362
PA-i5 Digiscoping Adapter For iPhone 5, 5S	£115	System for ATS/STS (includes DR-X Sleeve)	
SSR II Spotting Scope Rail For ATX, STX, ATS, STS, ATM, STM	£120	TLS APO Apochromat Telephoto Lens	£362
DCB II Swing Adapter for ATS/STS- ATM/STM	£278	System for ATX/STX (Includes DR-X Sleeve)	
DCB II Swing Adapter for ATX/STX	£278	TLS 800 Telephoto Lens for your SLR, fits ATS/STS/ATM/STM	£435

Manfrotto BIRDING TRIPODS

ALUMINIUM TRIPODS

	RRP	NOW
190 X Pro 3 New	£159.99	
190 X Pro 4 New	£169.99	
055 X Pro 3 New	£169.99	
CARBON FIBRE TRIPODS		
MT190 CX Pro 3 New	£225	
MT190 CX Pro 4 New	£239	
MT055 CX Pro 3 New	£244	
MT055 CX Pro 4 New	£279	
HEED HEADS		
128 RC	£14.99	
200 RC2	£19.99	
804RC2/804RF	£119.99	
844RC2/2	£169.99	
ACCESSORIES		
Spare Rings	from £28	
Quick Release Plate from	£13	

NEW LOWER PRICES

GITZO TRIPODS

	RRP	NOW
GT1531	£529.95	£425.99
GT2541	£709.95	£499.99
GT2542LS	£719.99	£599.99
GH1720QR 2 Way Head	£234.95	£194.99
GH2720QR 2 Way Head	£279.95	£249.99
GSS370 MC QR Plate	£41.95	£34.99

Velbon BIRDING TRIPODS

	RRP	NOW
Sherpa 200R c/w PH157Q Head	£110	£63
Sherpa 4370D c/w PH157Q Head	£149.99	£75
GEO E643D Carbon Fibre c/w QHD 63D B85 Head	£375	£258

Ultravid HD-Plus Binoculars

NEW — SAVE UP TO £200

	RRP	NOW
8x32 HD-Plus	£1350	See web
10x32 HD-Plus	£1375	See web
7x42 HD-Plus	£1600	£1435
8x42 HD-Plus	£1650	£1475
10x42 HD-Plus	£1700	£1525
8x50 HD-Plus	£1700	£1525
10x50 HD-Plus	£1750	£1549
12x50 HD-Plus	£1850	£1649

NEWS FLASH — NEW EL BINOCULARS WITH FIELD PRO PACKAGE

SWAROVSKI OPTIK EL LIMITLESS PERFECTION

The launch of the EL binoculars by SWAROVSKI OPTIK marked a milestone in long-range optics. These binoculars have now been further enhanced following intensive development & a great deal of dedication.
The result of these efforts is the Gen II. Family even
The crystal-clear optics provided by SWAROVISION technology and the unique ergonomic design, including the EL wrap-around grip, are enhanced by the new, perfectly harmonised FieldPro package.

THE ULTIMATE BIRDING BINO

EL WITH FIELD PRO PACKAGE — Incl. field bag pro, eyepiece cover, objective lens covers & lift carrying strap pro

	RRP
8x32 W B	£1640
10x32 W B	£1660
8.5x42 W B	£2000
10x42 W B	£2020
10x50 W B	£2150
12x50 W B	£2170

12 MONTHS INTEREST FREE CREDIT — 10% Deposit — Monthly Payment

See website for latest prices, availability & specifications

FREE Swarovski Cleaning Set worth £30 with Swarovski Binos

SLC — SWAROVSKI OPTIK — PERFECTION MEETS TRADITION

Compact & slim, great for using when you're observing wildlife, whether during the day or at twilight.

	RRP	NOW	12 MONTHS INTEREST FREE CREDIT 10% Deposit	Monthly Payment
SLC 8x42	£1310	£1179	£118	£36.43
SLC 10x42	£1380	£1242	£124.20	£48.48
SLC 8x56	£1640	£1475	£148	£48.00
SLC 10x56	£1690	£1520	£152	£49.70
SLC 15x56	£1740	£1565	£157	£45.90

EL TRAVELER — EXPERIENCE THE MOMENT — Crystal clear optics with a large field of view

	RRP	NOW
8x32	£1600	£1440
10x32	£1630	£1467

CL COMPANION — ALWAYS BY YOUR SIDE — The number one compact, lightweight binocular

	RRP	NOW
8x30	£850	£765
10x30	£870	£783

CL POCKET COMPACTS — PUTS THE WORLD IN YOUR POCKET — Outstanding optical clarity

	RRP	NOW
8x25	£560	£505
10x25	£600	£540

* FREE Cleaning Kit is not applicable to compact binoculars

Nikon TRAVELITE EX LIGHTWEIGHT & COMPACT FOR MORE VERSATILE USE

Versatile, all-round binoculars with a compact, lightweight body, multilayer lens coating. With a highly durable, waterproof and fog-free construction.

	RRP	NOW
EX 8x25	£135.99	£79
EX 9x25	£145.99	£85
EX 10x25	£155.99	£89
EX 12x25	£165.99	£95
V 8-24x25	£219.99	£89

PROSTAFF 5 — THE ADVENT WORK-HORSE OF MODERN OPTICS — superb optics, ergonomic design and waterproof, fogproof performance.

	RRP	NOW
8x42	£219.99	£189.99
10x42	£239.99	£209.99
10x50	£249.99	£219.99
12x50	£269.99	£239.99

MONARCH 7 — A BOLD INVITATION TO THE MAGNIFICENCE OF NATURE — Exquisite optical performance in a compact body delivering a wide field of view.

	RRP	NOW
8x30	£319.99	£269.99
10x30	£349.99	£299.99
8x42	£549.99	£469.99
10x42	£599.99	£499.99

HIGH GRADE LIGHT — ROBUST ONLY SUPERIOR PERFORMANCE WILL DO — These binoculars fit comfortably within your hands and are equipped with outstanding features.

	RRP	NOW
8x32	£891.99	£579.99
10x32	£1041.99	£599.99
8x42	£1255.99	£699.99
10x42	£1459.99	£749.99

ZEISS CONQUEST COMPACTS

Rugged, ergonomic design in a tough, resilient package. Bright, sharp images and enhanced twilight vision.

	RRP	NOW
8x20 T*	£355	£299
10x25 T*	£410	£339

VICTORY COMPACTS

These high-performance binoculars of the Victory range stand out for their excellent image performance and are also ideal for those who wear glasses.

	RRP	NOW
8x20 T*	£530	£439
10x25 T*	£560	£459

VICTORY HT — THE BRIGHTEST PREMIUM BINOCULARS ON THE WORLD — The brightest premium binoculars in the world with a transmission level of 95%+ for greater brightness and longer observation.

	RRP	NOW
8x42	£1495	£1399
10x42	£1725	£1429
8x54	£1910	£1625
10x54	£1950	£1699

CONQUEST HD — THE MODERN OBSERVATION OPTICS — Discover the smallest details, experience the greatest moments.

	RRP	NOW
8x32	£685	£557
10x32	£725	£589
8x42	£795	£679
10x42 £50 CASHBACK	£825	£695
8x56	£1160	£1099
10x56	£1195	£1039
15x56	£1285	£1199

VICTORY SF — WORLD'S BEST BIRDING & NATURE OBSERVATION BINOCULARS — You can experience every spectacle nature has to offer with brilliant optics and an unparalleled wide-angle field of view.

	RRP	RRP
8x42	£2050	£1949
10x42	£2075	£1979

See website for more details

DIGITAL SLR's

D7200 DIGITAL SLR Nikon

16.2 MP — FREE Battery Grip worth £120 offer ends 2/9/2016 see web — SEE WEBSITE FOR LATEST CASHBACKS

Step up to excellence with the sophisticated D7200. This nimble DX-format D-SLR delivers sumptuous stills, excels at video, & is fully connected. It's fast, versatile, & ready to match your every ambition.

Body Only RRP £939.99 **£849**
c/w Nikon 18-105mm RRP £1119.99 **£1049**

D3200 24.2 MP
c/w 18-55mm VR lens **£269** RRP £259.99

D3300 24.2 MP
Body Only **£329** RRP £299.99
c/w 18-55mm VR II **£349** RRP £489.99

D5200 24.1 MP
c/w 18-55mm VR lens **£395** RRP £499.99
c/w 18-55mm VR II

D5300 24.2 MP
Body Only **£469** RRP £579.99
c/w 18-55mm VR II **£499** RRP £679.99

D5500 24.2 MP
Body Only **£549** RRP £639.99
c/w 18-55mm VR II **£599** RRP £719.99
c/w 18-140mm VR **£767** RRP £899.99

D7000 16.2 MP
Body Only **£579** RRP £788.99

D7100 24.2 MP
Body Only **£748** RRP £849.99
c/w 18-105mm VR **£849** RRP £1299.99

D7200 16.2 MP — FREE Battery Grip worth £120 offer ends 2/9/2016 see web
Body Only **£849** RRP £929.99
c/w 18-105mm **£1017** RRP £1119.99

D610 24 MP — FREE Battery Grip worth £120 offer ends 2/9/2016 see web
Body Only **£1184** RRP £1529.99
c/w 24-85mm **£1599** RRP £2299.99

D750 24.3 MP
Body Only **£1499** RRP £1799.99
24-120mm f4 G AF-S ED VR **£1999** RRP £2349.99

See our website for full details & specifications

NIKON DIGITAL SLR LENSES

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3 NEW LENSES
AF-S NIKKOR 24-70mm f/2.8E ED VR
AF-S NIKKOR 200-500mm f/5.6E ED VR
AF-S NIKKOR 24mm f/1.8G ED
see website for details

	RRP	NOW
50mm AF f/1.8 D	£135.99	£109
105mm AF f/2.0 D DC	£781.99	£619
10-24mm AF-S DX f/3.5-4.5 G IF ED	£832.99	£639
16-85mm AF-S DX f/3.5-5.6 G ED VR	£573.99	£429
18-140mm AF-S DX NIKKOR IF f/3.5-5.6 G ED VR	£579.99	£429
18-200mm AF-S DX f/3.5-5.6 G IF-ED VR	£781.99	£569
18-300mm AF-S DX f/3.5-5.6 G ED VR	£849.99	£639
18-300mm AF-S DX f/3.5-6.3 G ED VR	£629.99	£499
24-70mm AF-S NIKKOR G ED Lens	£1565.99	£1199
24-85mm AF-S f/3.5-4.5 G ED VR	£519.99	£399
55-200mm AF-S DX Zoom Nikkor 1:4-5.6G ED	£239.99	£195
55-300mm AF-S DX f/4.5-5.6 G ED-VR	£377.99	£269
70-200mm AF-S f/2.8 G IF ED VR II Lens	£2085.99	£1579
70-300mm AF-S f/4.5-5.6 G IF-ED VR	£553.99	£419
TC-14E AF-S III 1.4 Teleconverter	£449	£399
TC-17E AF-S III 1.7 Teleconverter	£395	£309
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See website for more lenses

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Superfast and connected – the compact for experts
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16 MP
The camera that can go anywhere. Take it snorkelling, SCUBA diving, sailing or fishing. It's waterproof down to 30M. Take it on a snowboarding, it's freezeproof to -10°C. Take it hiking, climbing or fishing, it can withstand drops from as high as 2m. Always bring home amazing views.
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Simple stylish shooting
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DIGITAL SLR LENSES

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CASHBACK

For the latest CASH BACK DEALS on lenses & cameras see website

TAMRON We also stock...

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60mm F2 Di II	£489	£319
16-300mm F3.5-6.3 Di II VC PZD £50 CASHBACK	£529.99	£449
18-200mm AF F/3.5-6.3 XR Di II LD Aspherical [IF] MACRO	£240.60	£131
18-270mm F/3.5-6.3 Di II VC PZD	£568.20	£289
24-70mm F2.8 Di VC USD Digital SLR £100 CASHBACK	£1099.99	£740
70-200mm SP F/2.8 Di VC USD £75 CASHBACK	£1650	£999
70-300mm F4-5.6 SP Di VC USD Digital SLR	£439	£249
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24.2 MP — SEE WEBSITE FOR LATEST CASHBACKS

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c/w 18-55mm IS STM **£599**
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EOS 6D 20.2 MP
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See our website for full details & specifications

CANON DIGITAL SLR LENSES

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EF 50mm f/1.8 STM	£139.99	£97
EF 85mm f/1.8 USM	£399.99	£240
EF 100mm f/2.8 L Macro IS USM	£1059.99	£635
EF 100mm f/2.8 USM Macro	£469.99	£373
EF-S 10-18mm f/4.5-5.6 IS STM	£299.99	£181
EF 16-35mm f/2.8 L II USM	£1789.99	£1698
EF 16-35mm f/4 L IS USM	£1199.99	£721
EF 17-40mm 4.0 L USM Lens filter size 77mm	£849.99	£499
EF 17-55mm f/2.8 IS USM	£999.99	£562
EF 24-70mm f/2.8 L IS USM	£2299.99	£1399
EF 24-70mm f/4 L IS USM	£1499.99	£699
EF 70-200mm f/2.8 L IS II USM	£2399.99	£1499
EF-S 55-250mm f/4.0-5.6 IS STM	£349.99	£225
EF 75-300mm f/4.0-5.6 USM III Filter size 58mm	£349.99	£229
EF 100-400mm f/4.5-5.6L IS II USM	£1999	£1899
Extender EF1.4x III	£449.99	£319
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See our website for for more lenses

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NEW SIGMA 24-35mm f2 DG HSM ART £949

Available in Canon and Nikon Fit	RRP	NOW
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30mm f1.4 DC HSM Art Lens	£489.99	£369
35mm f1.4 DG HSM Lens	£799.99	£699
50mm f1.4 DG HSM Lens	£849.99	£699
105mm f2.8 EX DG Macro OS HSM Lens	£649.99	£379
10-20mm f3.5 EX DC HSM Lens	£649.99	£384
12-24mm f4.5-5.6 EX DG NN11 HSM Lens	£799.99	£599
18-35mm f1.8 DC HSM Lens	£799.99	£649
17-50mm f2.8 EX DC OS HSM Lens	£685.99	£369
18-250mm f3.5-6.3 DC Macro OS HSM Lens	£499.99	£299
18-300mm f3.5-6.3 DC Macro OS HSM Lens	£499.99	£299
24-35mm f2 DG HSM ART Lens	£949.99	£See web
24-70mm f2.8 EX IF HSM Lens	£899.99	£599
24-105mm f4 DG OS HSM Lens	£849.99	£679
50-500mm f5-6.3 DG OS HSM Lens	£1499.99	£999
70-200mm f2.8 APO EX DG OS HSM Lens	£999.99	£799
150-600mm f5-6.3 DG OS HSM Sport Lens	£1599	£1449
150-600mm f5-6.3 DG OS HSM COMP Lens	£1199	£899
EF 610 SUPER DG Lens	£259.99	£125
EF 610 ST DG Lens	£169.99	£85

CASHBACK on Sigma 10-20mm 3.5 EX DG HSM Lens
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Hero4 Motorsports	Wi-Fi Remote, 1 Curved, 1 Flat Adhesive Mount	1080p60	12MP	£359
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16 MODELS - SEE WEBSITE

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TROPHY CAM AGGRESSOR HD LOW GLOW — NEW
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- 14MP Camera
- Full Colour
- Field Scan 2x

Brown RRP £235 **£195**
Camo RRP £260 **£215**

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- 14MP Camera
- Full Colour
- Field Scan 2x

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70 200 F4 L IS USM	£805
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70 300 F4/5.6 L IS USM	£899
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DX NON FULL FRAME LENSES

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10-24 F3.5/4.5 AFS G	£638
16-80 F2.8/4 AFS ED VR	£869
16-85 F3.5/5.6 AFS VR	£399
18-55 F3.5/5.6 AFS VR	£99
18-105 F3.5/5.6 AFS G no box	£179
18-140 F3.5/5.6 AFS VR	£379
18-300 F3.5/6.3 AFS VR	£548
35 F1.8 AFS G	£169
40 F2.8 AFS G macro	£177
55-300 F4.5/5.6 AFS VR	£268

FX FULL FRAME LENSES

14-24 F2.8 AFS G ED	£1309
16 F2.8 AFD Fisheye	£624
16-35 F4 AFS VR	£828
18-35 F3.5/4.5 AFS G	£517
20 F1.8 AFS G ED	£647
24 F1.4 AFS	£1378
24 F1.8 AFS G ED	£629
24 F3.5 PCE	£1464
24-70 F2.8 AFS G ED VR	£1849
24-70 F2.8 AFS G ED	£1198
24-85 F3.5/4.5 AFS VR	£399
24-120 F4 AFS G ED VR	£719
28 F1.8 AFS	£494
28-300 F3.5/5.6 AFS VR	£658
35 F1.4 AFS G	£1294
35 F1.8 AFS G	£398
35 F2 AF-D	£254
50 F1.4 AFS G	£274
50 F1.8 AFS G	£139
58 F1.4 AFS G	£1299
60 F2.8 AFS	£369
70-200 F2.8 AFS VRII	£1578
70-200 F4 AFS G ED VR	£899
70-300 F4.5/5.6 AFS VR	£439
80-400 F4.5/5.6 AFS G VR	£1899
85 F1.4 AFS G	£1148
85 F1.8 AFS G	£348
105 F2.8 AFS VR macro	£629
200 F2 AFS G VRII	£3799
200-500 F5.6 AFS E ED VR	£1179
300 F2.8 AFS ED VRII	£3749
300 F4 E PF ED VR	£1638
400 F2.8 G E FL ED VR	£9497
500 F4 E AFS FL ED VR £8148	
600 F4 E AFS FL ED VR	£9648
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TC17EII converter	£308
TC20EIII converter	£366

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X-T1 blk + 18-135mm	£1248	18-135mm F3.5/5.6 XF	£549
X-T1 blk + 18-55mm	£1177	23mm F1.4 XF	£647
X-T1 body Black	£878	27mm F2.8 XF	£309
X-T10 + 18-55mm	£799	35mm F1.4 XF	£378
X-T10 body Black	£499	50-140mm F2.8 R OIS	£1098
X-E2 + 18-55mm OIS	£728	55-200mm OIS XF	£494
X-E2 body	£499	56mm F1.2 R APD	£998
10-24mm F4 XF	£714	56mm F1.2 XF	£728
14mm F2.8 XF	£648	60mm F2.4 XF	£424
16mm F1.4 XF	£728	90 F2 R LM WR	£699
16-55mm F2.8	£798	X100T Black/Silver	£839
18mm F2 XF	£349	X30 Black/Silver	£319

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K3 II body	£769
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K3 II + 18-135	£1069
K3 II + 16-85	£1149

SIGMA

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10-20 F4/5.6 EX DC HSM	£299
18-300 F3.5/6.3 DC OS mac	£399
24 F1.4 DG HSM Art	£699
24-35 F2 DG HSM Art	£949
35 F1.4 DG HSM Art	£699
50 F1.4 EX DG HSM Art	£699
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150-600 F5/6.3 OS Sport	£1447

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100 F4 E macro £199
105 F3.5 £99
135 F4 PE £199
150 F3.5 E £99
150 F3.5 PE M Box £149
200 F4.5 PE £199
2x extender E £219
E14, 28 or 42 ext tube £49
120 RFH £69
Polaroid Back £39
WLF £69
Plain prism £59
Rotary prism £129
AEII Prism £79
Angle viewfinder E £129
Winder early £79
Speed Grip E £39
Tripod adapter E £39
Winder early £49
Metz SCA 386 £49
BRONICA SQ 6x6 USED
SQ + 80 F2.8 PS + 120RFH £269
40 F4 S £299
50 F3.5 S £149
135 F4 PS M £249
150 F3.5 S £79
150 F4 PS £149/199
200 F4.5 PS M box £199
2x PS converter M £179
36mm ext tube £79
135N back £139
SQAi Polaroid back £79
SQAi 120 RFH £79
SQA 120 RFH £49
Plain Prism S Boxed £69
AE Prism Early £79
ME Prism Finder £69
Metz SCA 386 £49
Pro shade S £59
Lens Hood 65 80 £20
SQAi Motorwinder £149
Speed grip S £69
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1D MKIV body box £2199
1D MKIII body box £799
7D body box £449
5D MKIII body box £1699
5D MKII body box £999
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50D body box £299
40D body £199
30D body box £169
600D body box £269
550D body box £249
450D body £179
400D body £129
100D body £199
1100D body box £179
BG E1 £29 BG E2 box £39
BG E2N box £59 BG ED3 £39
BG E5 box £49
BG E6 box £119
BG E7 box £99
BG E8 box £79
BG E16 box £169
G12 compact box £199
G11 compact £129
CANON AF USED
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EOS 3 + PB E2 £239
EOS 3 + BP E1 £199
EOS 3 £149
EOS 1n or EOS 3 b/o ea £129
EOS 5 body £39
EOS 300V or 650 b/o ea £29
EOS 600 body £20
8 15 F4 L box £749
10 22 F3.5/4.5 U £349
15 85 F3.5/4.5 EFS £399
17 40 F4 L box £449
17 55 F2.8 IS U £449
18 55 F3.5/5.6 IS EFS £79
18 55 F3.5/5.6 IS STM £99
18 55 F3.5/5.6 EFS £59
18 135 F3.5/5.6 EFS IS £219
18 200 F3.5/5.6 EFS £299
24 F2.8 IS USM £369
24 70 F2.8 LII M box £1199
24 70 F2.8 box £699
24 105 F4 L £499
28 F1.8 USM box £299
28 90 F3.5/5.6 £79
35 70 F3.5/4.5 £69
40 F2.8 STM £99
50 F1.4 U box £219
50 F1.8 MKI £149
50 F2.5 mac box £149
55 250 F4/5.6 ISII M box £129
60 F2.8 EFS mac £249
65 F2.8 MPE M box £699
70 200 F2.8 IS U LII M box £1249
70 200 F4 IS U L £699
70 200 F4 U L £399
70 300 F4/5.6 L IS U £779
70 300 F4/5.6 IS U £279
75 300 F4/5.6 MKIII £89
85 F1.2 L MKII M £1279
85 F1.2 L MKI M £949
85 F1.8 U box £219
100 400 F4.5/5.6 LII IS U M box £1699
100 400 F4.5/5.6 L IS U £699/899
135 F2 M box £639
200 F2.8 LII U £449
300 F2.8 LI IS U £2999
300 F4 L IS USM box £699
400 F2.8 L IS U £3799/4299
400 F5.6 L box £699
500 F4 L IS U £4299
500 F4 L IS U £3799
600 F4 LII IS U box £7499
1.4x extender MKII £219
2x extender MKII £219
Kenko 1.5x conv £59
Kenko 1.4x Pro £89
Kenko Pro 300 DG 1.4x £99
Kenko Pro 300 DG 2x £99
Teleplus 2x DG conv £89
Kenko ext tube set DG £89
Jessops ext tubes £69
BP 50 £20
LC 4 wireless kit £89
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PB E2 drive £99
Tripod mnt adapt A (W) £59
SIGMA CAF USED
8 15 F4.5/5.6 DC box £419
10 F2.8 DC Fisheye £319
10 20 F4/5.6 HSM box £199
17 70 F2.8/4 DC OS HSM £239
17 70 F2.8/4.5 DC £149
18 35 F1.8 DC M £499
18 50 F2.8/4.5 DC OS £149
18 50 F3.5/5.6 DC box £49
24 70 F2.8 HSM £469
24 70 F2.8 EX DG mac £349
50 F1.4 EX DC £249
70 200 F2.8 DG OS £599
70 200 F2.8 EX DG HSM £429
105 F2.8 DG OS £329
105 F2.8 EX £219
120 300 F2.8 EX DG OS box £1349
120 300 F2.8 EX DG £POA
120 400 F4/5.6 DG OS £449
150 F2.8 EX DG OS £549
150 F2.8 EX DG £399
150 500 F5/6.3 DG OS £499
180 F3.5 EX £429
600 F8 mirror £299
800 F5.6 EX DG box £2899
1.4x EX DG conv £149
2x EX DG conv £149
OTHER CAF USED
TAM 10 24 F3.5/4.5 Dill box £229
TAM 24 70 F2.8 Di VC £499
TAM 70 200 F2.8 Di VC USD £649
TAM 70 300 F4/5.6 £99
TAM 180 F3.5 Di £369
TAM 200 500 M box £499
CANON FLASH USED
CP E3 £49
SB E2 bracket £119
ST E3 box £199
ST E2 transmitter £89
ML3 non digital £69
MT24 EX ringlight £499
430EZ non digital £39
550EX £149
580EX box £239
580EX II £299
600EX RT box £349
CANON MF FD USED
F1N AE + AE motor drive £499
F1N AE body £399
A1 body £79
T90 body box £149
T90 body £69
28 F2.8 FD £49
35 70 F3.5/4.5 FD £59
50 F1.4 FD £99
50 F1.8 FD £39
70 210 F4 FD £69
135 F3.5 BL £39
300 F4 FD £199
2X B Extender £69
TOK 60 300 F4/5.6 £69
VIV 28 105 F2.8/3.8 Series 1 £89
WLF fits F1 early £79
Winder A £19
Angle finder B £49
PB E1 power booster £69
CANON FLASH USED
300TL £39
299T £49
CONTAX MF USED
28 F2.8 AE £199
40 80 F3.5 AE £199
50 F1.4 AE £199
50 F1.7 AE £89
135 F2.8 MM £199
FUJI DIGITAL USED
X E1 body silv box £199
X M1 body blk box £189
16 50 F3.5/5.6 XC M £179
18 F2 M box £199
18 55 F2.8/4 £279
18 135 F3.5/5.6 £499
27 F2.8 XF £249
35 F1.4 R M box £299
55 200 F3.5/4.8 M box £399
X E1 grip box £39
X20 black box £249
X10 black box £179
HS10 box £79
FUJI MED FORMAT USED
GSW690 III £679
HASSELBLAD XPAN USED
30 F5.6 M box £1699
90 F4 M £249
Centre filter 49mm £149
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H2 + prism + mag + 80 F2.8 £1399
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501CM black + 80 F2.8 CB + A12 M £1199
903SWC chr + VF £1799
SWC Superwide + VF £1199
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PME prism box £149
45° Prism late £149
45° Prism early £69
Chimney early £89
NC1 prism £69
WLF late £110
WLF chrome late £99
WLF early £49
A16 black £119
A12 chrome latest £299
A12 late blk/chr £129
Polaroid back £89
50 F2.8 FE box £549
50 F4 blk T* £349
150 F4 CF £449
150 F4 chrome £149
250 F5.6 chrome £199
Vivitar 2x conv £69
Polariser 60mm £79
LEICA M COMPACT USED
50 F1.4 six bit £1499
50 F2 black M box £999
90 F2 black E55 £799
LEICA SLR USED
R6.2 body chr box £449
28 70 F3.5/4.5 ROM box £479
70 200 F4 (3 cam) £249
250 F4 (3 cam) £399
Angle finder R £149
LIGHTMETERS USED
Minolta Autometer IVF £149
Minolta Flashmeter V £199
Minolta Spotmeter M £199
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Polaris Flashmeter £99
Sekonic L308 £99
Sekonic L358 £169
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MAMIYA 645 MF USED
Plain prism (645 Super) £39
WLF 645N/1000S/J £49
Polariod Back HP401 £29
Polaroid back £29
120 Insert £20
HA401 120 RFH Box £49
120 Back..£39 Winder £79
50 F4 shift £399
55 110 F4.5 box £299
105 210 F4.5 ULD C £179
150 F2.8 A £249
150 F3.5 N £79
210 F4 N M £79
Ext Tube 1, 2, 3S each £29
Teleplus 2x converter £49
Vivitar 2x converter £39
MAMIYA TLR 6x6 USED
C330 F Body + WLF £149
55 F4.5 £199
65 F3.5 box late £199
65 F3.5 serviced £149
80 F2.8 late serviced £139
180 F4.5 £149
250 f4.5 late serviced £249
250 f4.5 early serviced £179
Prism £99
Porroflex £49
Paramender £49
MAMIYA 7 RF 6x7 USED
7II black or champ ea £799
50 F4.5 L + VF £699
80 F4.5 L M box £699
150 F4.5 M £399
210 F8 + VF box M £499
Panoramic kit £49
MAMIYA RB 6x7 USED
Pro SD + 127 KL + RFH + WLF £549
Pro SD comp M £649
Pro S body £149
Pro S body scruffy £99
WLF £79
120 645V back £99
90 F3.5 KL £249
127 F3.5 KL £299
180 F4.5 C £99
250 F4.5 KL M box £249
Ext tube 2 £49
MAMIYA RZ 6x7 USED
RZ ProII + 90 + WLF + 120 RFH £499
RZ Pro body £149
120 RFH Pro II £499
120 RFH Pro I £49
Polaroid back £69
WLF £79
FE701 prism £179
AE prism early £79
Winder II £69
50 F4.5 W £199/299
65 F4 box M £399
90 F3.5 W M box £299
127 F3.5 box £299
180 F4.5 W box £199
360 F6 £149
No 2 ext tube £49
Pro shade £49
MINOLTA/SONY DIGITAL USED
Sony A77 II body M box £599
Sony A350 body £139
Sony A100 body £89
Sony VGB30AM £79
Sony VC C77AM M box £149
Sony VGC70AM £139
Sony HVLF56AM flash £189
Sony LA EA4 M box £189
Sony A6000 body blk M box £379
SONY NEX USED
NEX 7 body box £349
NEX 5N + 18 55 £239
NEX 5 body £179
10 18 f4 OSS M box £529
Samyang 12 F2 M box £219
MINOLTA/SONY AF USED
9000 body £79
800Si QD M £79
700Si + VC700 £69
700Si body £49
7xi body £49
Dynax 5 body £39
505Si Super £25
300Si or SPXi body ea £19
18 70 F3.5/5.6 £69
20 35 F3.5/4.5 M box £249
24 50 F4 £149
24 105 F3.5/4.5 AFD box £179
28 F2.8 £99
28 80 F4/5.6 £39
28 85 F3.5/4.5 £129
28 100 F3.5/5.6 D £49
35 70 F4 £39
35 70 F3.5/4.5 £25
35 80 f4/5.6 £25
35 105 F3.5/4.5 £99
50 F1.4 AF £149
50 F1.7 £79
50 F2.8 macro £179
75 300 F4.5/5.6 £99
100 300 F4.5/5.6 APO £169
500 F8 mirror £349
VC9 grip £149
VC700 grip £49
RC1000S/L cord £15
AW90 £49
MD90 + BP90 M £79
SONY LENSES USED
16 35 F2.8 ZASSM box £979
16 50 F2.8 SSM £379
16 70 F4 ZA OSS M box £599
18 55 F3.5/5.6 SAM £139
18 200 F3.5/6.3 DT £199
24 70 F2.8 ZE SSM £999
70 400 F4/5.6 SSM 11 M box £1299
1.4x conv M box £289
SIGMA MIN/SONY AF USED
28 135 F3.8/5.6 £79
28 300 F3.5/6.3 mac £149
50 F1.4 £149
50 F2.8 EX DG mac £149
55 200 F4/5.6 £69
70 300 F4/5.6 DG OS £189
170 500 F5/6.3 £379
600 F8 £299
1.4x EX DG conv £149
TAM 60 F2.8 mac £239
TAM 70 200 F2.8 Di £499
TAM 70 300 F4/5.6 Di £89
TAM 150 600 VC £799
Teleplus 1.4x conv £69
Teleplus 2x conv £79
Kenko 1.4x Pro 300DG £149
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Min 1200 Ringflash £49
MINOLTA MD USED
X700 body black £69
X300 body chrome £49
X300S body black £49
XGM body chrome £49
28 F3.5 MD £39
35 70 F3.5 MD £49
35 135 F3.5/4.5 MD £49
50 F1.7 MD £39
70 210 F4 MD £79
75 200 F4.5 MD £45
TOK SL 400 F5.6 box £129
Minolta auto bellows 1 + 100 £149
NIKON DIGITAL AF USED
D4 body box £2999
D3s body £2399
D3X body box £2199
D2Xs body box £499
D2X body box £399
D810 body box £POA
D800E body box £1399
D800 body box £1399
D700 body box £699/799
D610 body box £699
D300s body £299/349
D300 body box £249/299
D7000 body £349
D5100 body £249
D5000 body £199
D3100 body £149
D90 body £199
D80 body £149
MBD 11 £119
MBD 12 M box £219
MBD 80 £49
MBD 200 £49
Coolpix P7800 box £249
NIKON AF USED
F5 body £199/399
F4 body £349
F4E body £299
F4S body scruffy £199
F801 body £29/59
F601 body £29
10.5 F2.8 EX Fisheye £399
12 24 F4 DX £499
14 24 F2.8 AFS £1099
16 85 F3.5/5.6 AFS VR £299
17 55 F2.8 AFS DX £449
18 135 F3.5/5.6 AFS DX £149
18 200 F3.5/5.6 AFS VRII M box £399
20 F2.8 AF £329
24 F1.4 AFS M box £999
24 F2.8 AFD £299
24 50 f3.5/4.5 AF £129
24 70 F2.8 AFS box £999
24 85 F3.5/4.5 AFG £199
24 120 F3.5/5.6 VR £299
28 100 F3.5/5.6 AF G £69
28 105 F3.5/4.5 AFD box £149
28 300 F3.5/5.6 £POA
35 F1.8 AFS M box £129
40 F2.8 AFS DX M box £149
50 F1.4 AFD £179
60 F2.8 AFD £249
70 200 F2.8 AFS VRII M box £1299
70 200 F2.8 AFS VRI £749
70 200 F4 AFS VR box £749
70 300 F4/5.6 AFD £149
80 200 F2.8 AFD N £599
80 200 F2.8 early £249
80 400 F4.5/5.6 VR £599
85 F1.8 AF £169
85 F3.5 AFS VR DX £249
105 F2.8 VR £479
105 F2.8 AFD M £399
180 F2.8 AF £239
200 F2 AFS VRI £2399
200 400 F4 AFS VRI £2999
200 400 F4 AFS VRII M box £3999
300 F2.8 AFS VRI £2799
300 F4 AFS M box £699
300 F4 AFS box £649
500 F4 AFS Mk1 £POA
600 F4 AFS VR £5999
TC17EII £239
TC20EIII M box £329
TC20E box £149
Kenko MC7 £69
SIGMA NAF USED
10 20 F4/5.6 DG HSM £249
12 24 F4.5/5.6 MKII EX DG HSM £489
12 24 F4.5/5.6 EX DG HSM £399
15 F2.8 EX £299
15 30 F3.5/4.5 EX DG £199
18 50 F2.8 EX DC Mac £199
18 200 F3.5/6.3 DC box £139
28 300 F3.5/6.3 early £129
50 F1.4 DG Mint £199/239
50 F2.8 EX £119
50 500 F4/6. DG OS £649
70 300 F4/5.6 macro DG £99
100 300 F4 EX DG £449
120 400 F4/5.6 DG OS £449
150 500 F5/6.3 DG OS £499
150 600 F5/6.3 OS Sport M box £1299
170 500 F5/6.3 DG £349
300 F2.8 EX DG £1299
1.4x EX DG M £139
1.4x EX conv £99
2x EX DG conv £159
TAMRON NAF USED
17 35 F2.8/4 £169
17 50 F2.8 XR Di £199
18 270 F3.5/5.6 box £199
70 300 F4/5.6 Di VC USD £239
90 F2.8 Di box £249/299
90 F2.8 £199
150 600 F5/6.3 Di VC USD M £699
OTHER NAF USED
TOK 11 16 F2.8 ATX Pro £349
TOK 12 28 F4 ATX DX box £399
TOK 16 50 F2.8 ATX Pro £349
TOK 80 400 F4.5/5.6 ATX £249
ZEISS 21 F2.8 ZFII M box £999
FLASH / ACCESSORIES USED
SB 24 £49 SB 25 £49
SB 28 £69 SB 80DX £79
SB 800 box £189
SB 700 M box £199
SB 900 £269
SB 910 M box £289
SD 8 batt pack £49
DR 6 angle finder £149
DR 3 angle finder £69
MB 16 M box £89
MB 23 (fits F4) £79
MC 30 remote £39
MF 23 (date back F4) £79
NIKON MF USED
F2 + DP 1 blk £199
F3HP body £199
F3 body £149
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Introducing Nissin's new pocket size flashgun, the i40. Weighing in at just 203g and measuring only 85mm high, this high specification flash is ideal for travelling.

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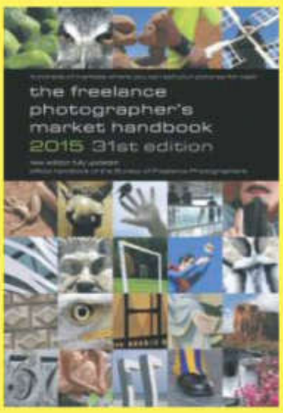

OUT NOW! The 2015 edition of The Freelance Photographer's Market Handbook

Described as the photographer's bible, this 224-page BFP Handbook has hundreds of markets where you can sell your pictures for £££s. It includes magazines, greetings card and calendar publishers, picture libraries, newspapers, book publishers etc.

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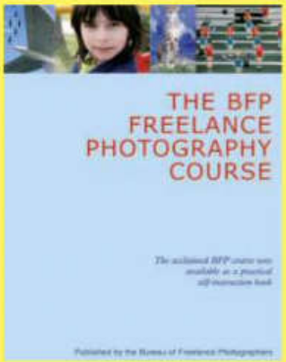

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While the BFP Handbook (above) will show you WHERE to sell your photos, this lavishly illustrated manual will show you HOW to sell them.

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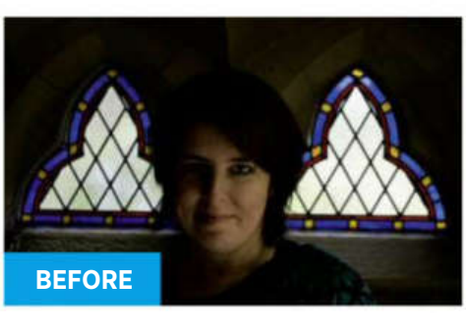
DIGITAL DOCTOR

Our resident imaging medic breathes life into a poorly-lit portrait...

Got a photo in need of some help?
Let our expert transform it into something new. Send pics to ***dpimages@bauermedia.co.uk***

JONATHON ASHER SENT IN this portrait taken in front of some stained glass windows. "We were standing in the entrance to a little church and I thought it might make a nice background for a photo. I asked my friend to pose for me, but the shot came out much darker than I was expecting. Can you help?"

Digital Doctor says: I can understand Jonathon's frustrations here. I often think a window is going to make a great frame for a shot, but shooting into the light can make it really difficult to get a good exposure. The camera sees a lot of bright, white tones pouring into the lens, so it reduces the exposure to compensate in its attempt to capture a well exposed image. That usually means the inside of the room will turn out much too dark.



Luckily, Jonathon did the right thing by shooting in RAW. Because RAW files contain much more image data than JPEGs, it's possible to tease extra dynamic range out of a shot by compressing Highlights and boosting Shadows.

I increased the **Exposure** and increased the **Shadows** in Adobe Camera Raw until the face looked right. I then opened the shot into Photoshop to do some basic skin retouching. This involved using the **Clone Stamp tool** and the **Healing Brush tool** to replace blemishes with smooth skin from another area. I also did some dodging and burning around the irises to make the model's eyes more pronounced. To do this, I created a new Layer using and then filled it with grey (**Edit→Fill→50% Gray**). I changed this Layer's Blending Mode to **Overlay**, then painted black and white onto the Layer to lighten or darken the tones.

Finally, I boosted the background colours by adding a **Vibrance** Adjustment Layer and then added a **Layer Mask** and painted black into the face so the skintones weren't affected.

The DIGITAL DOCTOR will see you now!

■ **To send one of your problem pictures to our Digital Doctor, email it to us at *dpimages@bauermedia.co.uk*.**

Tell us about the shot – where it was taken, why you took it and what you were looking to achieve. Include a mugshot of yourself with your picture, and the best entries submitted will be published in the mag and receive a little digital surgery from our resident Photoshop guru!

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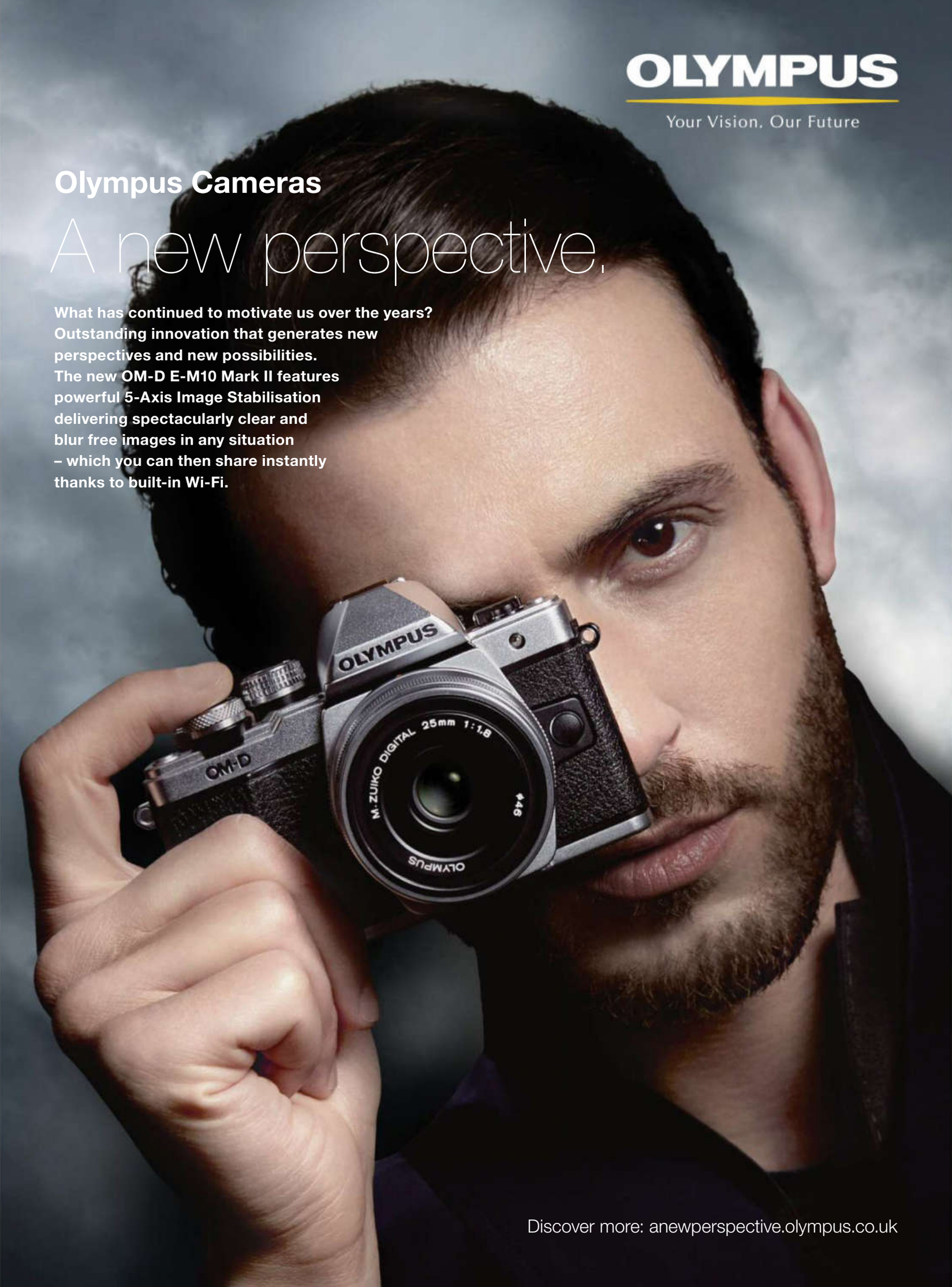
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